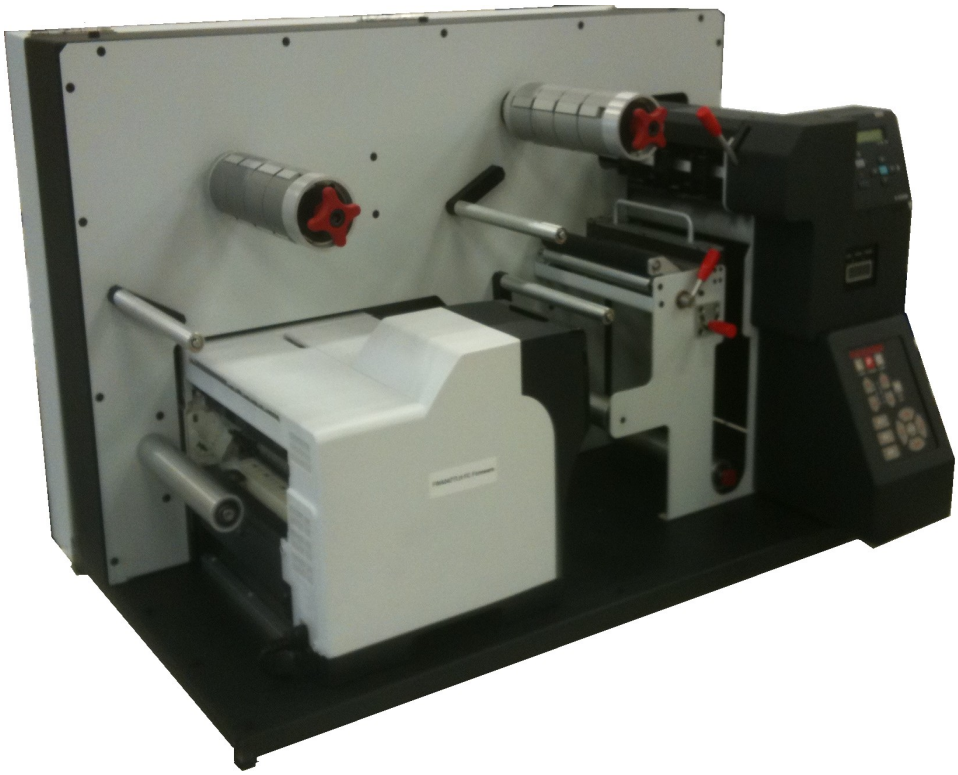
# Allen Datagraph Systems

## i-TECH AXXIS SR Manual



Manual Date February 2011

Axxis user manual for build 12-R or later software

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communication connector locations:

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# 1 Warranty

ALLEN DATAGRAPH Digital Finishing Systems are warranted to be free of defects in both materials and workmanship. Should any part of this equipment be defective, it will be repaired or replaced, at the option of the manufacturer, at no charge for parts or factory labor for a period of one (1) year from the date of installation. All warranty services are performed at the Allen Datagraph factory. Replacement parts not installed at the factory will be billed to the customer at regular prices and credit will be issued when the defective parts are returned. The customer is responsible for freight on warranty parts and repairs.

This warranty is void if:

The equipment has been damaged by negligence, accident or mishandling, or has not been operated in accordance with the procedures described in the operating instructions;

or:

The equipment has been altered or repaired by other than an approved service station or factory service center, or adaptations or accessories have been attached to the equipment that shall have adversely affected the performance, safety, or reliability of the equipment.

**NO OTHER WARRANTY, EXPRESSED OR IMPLIED, APPLIES** to the equipment. Allen Datagraph does not assume any responsibility for consequential damages occasioned by the equipment, or inconvenience or interruption in operation. In case of unsatisfactory operation, Allen Datagraph or its Dealer should be notified immediately.

# 2 Service Policy

When making your decision as to which way to proceed with the repair of your ADSI equipment, please bear in mind that troubleshooting of complex electronic equipment can sometimes take multiple attempts to repair an issue. It is always best from a manufacturer's point of view to have the complete system in-house to insure that the machine is in perfect working order when you receive it back from us. Please consider all aspects before making your decision as to which option to utilize. We make every attempt to minimize downtime for our customers, and sometimes the best way is to have the machine in our facility.

## WARRANTY SERVICE:

***Option 1)*** **ATTEMPT TO REPAIR OVER THE PHONE:** We do not normally encourage customers to repair ADSI equipment on their own. Sometimes, in the interest of minimizing downtime, and under the guidance of ADSI service personnel, we will try and repair an issue over the phone. This may require that you ship us parts from your machine as per the warranty statement found in the front of your ADSI user's manual, or for ADSI to ship parts to you for installation.

***NOTE: Any replacement parts shipped to you require that you ship the old parts back to ADSI unless previously approved. Failure to do so will result in the parts being charged to you. All returned parts require a Return Material Authorization Number (RMA), which must be obtained from an ADSI representative prior to return shipment.***

All phone-supported repairs are handled on a per-case basis, and at the discretion of ADSI Service personnel.

***Option 2)*** **SERVICE AT OUR FACILITY:** Ship the machine to ADSI for repair under the terms of the written warranty statement found in the user's manual. Parts and labor are provided at no charge to the customer, but the customer is responsible for freight to and from Allen Datagraph.

***Option 3)*** **ON-SITE SERVICE:** ADSI will, on occasion, for the cost of all airfare and travel expenses, send an ADSI technician to your facility to repair in-warranty equipment. Parts and labor are provided at no cost to the customer. Bear in mind that on-site service is sometimes not the most cost or time-effective way to resolve issues and may result in longer down time due to scheduling of airfare, etc.

## NON-WARRANTY SERVICE:

In most out of warranty repair scenarios, we require customers to send the machine to us for repair. This is the best way to insure that the machine you get back will be fully functional upon arrival at your facility.

In some cases we may determine that the problem is a simple one, such as a belt, and decide the issue may be resolved without shipping the machine in. In this case, you can decide to repair the machine yourself. This will require us to ship parts to you for installation. Parts will be charged at retail pricing prior to shipping. Bear in mind that this method may ultimately increase downtime and/or may take more than one attempt to resolve the issue. If the issue cannot be resolved in a timely manner, the machine will be required to be shipped to ADSI for service.

***NOTE:A credit card number is required at the time of shipment of any parts. In a warranty situation, the card will not be charged with the exception of shipping charges, as long as parts are returned to ADSI in a timely manner. Non-warranty parts are required to be paid in full prior to shipment.***

# 3 Technical Support

Up to 4 hours of calls in technical support is available at no charge during the warranty period. Technical support is available during business hours based on Eastern Time Monday thru Friday. Technical support outside the limits stated will be billed at current rates.

For Technical support use the Allen Datagraph web site. Click on Tech Support, or call: 603-216-6344

There are many online documents available to help you to use the AXXIS at our technical support page at http://www.allendatagraph.com. Then click on Technical Support and Online Documents then click on Axxis link under orange Label Production heading.

# 4 Setting Up Your i-TECH AXXIS SR System

The i-TECH AXXIS SR System consists of an Epson B500 Printer incorporated into the ADSI SR laminator and cutter. The SR is designed for short run labels. The SR prints, laminates and cuts dielines for labels.

Warning: Do not connect the Axxis SR or printer to the computer until told to do so by the installation CD.

## 4.1 Installation of SR

### 4.1.1 Setup on Table

The i-Tech AXXIS SR is a tabletop label finishing device. Once removed from its crate, place the unit on a table that can support 200+ Lbs (90 kg). You need at least 4 people to move the SR from the shipping crate to a table.

### 4.1.2 Installing Printer into SR

Open the printer box, connect communication cables to printer and then set it in position as shown in next section.

### 4.1.3 Power

**WARNING: IF YOU RUN YOUR EQUIPMENT ON 220V WITH INPUT MODULE SET FOR 110V IT WILL DAMAGE YOUR EQUIPMENT.**

### 4.1.4 Plugging-in Printer and SR System

Printer Power requirements

B-500DN printer 32 watts available only for following voltage models

Only available in one model 90-132 VAC 49.5-60.5 Hz

AC power for printer is converted from 220vac to 110vac by an internal transformer.

SR power requirement is 500 watts can be configured to operate from any of the following power sources:

100-132 VAC / 47-63 Hz or 180-240 VAC / 47-63 Hz

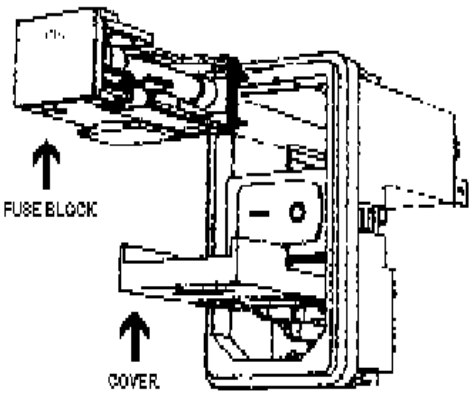
Important Note: Use of a HIGH QUALITY surge protector or uninterruptible power supply (500 sr + 32 b500 printer = 532 watts) is REQUIRED by Allen Datagraph Systems. Failure to do so could affect your warranty coverage if a problem arises due to improper power connection.

**CAUTION**: The power cord is a three-conductor cable that incorporates a safety (earth) ground connection. For the machine to operate safely and correctly, the power cord *must* be plugged into an outlet that has an earth ground contact. *Never* plug the power cord into a two-prong outlet by using a 3=2 cord adapter.

**CAUTION**: *Never* allow roll or sheet goods to rub on the power cord because the material can cut the cord causing an electrical fire hazard!

ALLEN DATAGRAPH products are factory preset for the power requirements of the destination country. The machine's configuration is indicated on the power input module as either 115V or 230V. To change the configuration:

a. Disconnect the AC power cord from the fuse block on the power input end panel.
b. Open the fuse block cover with a small flat screwdriver.
c. Orient the fuse block so that the desired voltage appears in the fuse block cover. If you have 110v ac use one 5 amp fuse. If you have 220v ac use two 2.5 amp fuses.
d. Close the fuse block cover and verify that the desired voltage is showing.




POWER ENTRY MODULE

### 4.1.5 Installation Order

Software must be installed in the correct order or installation will fail.

Installation Summary: (Detailed instructions follow in subsequent sections.)

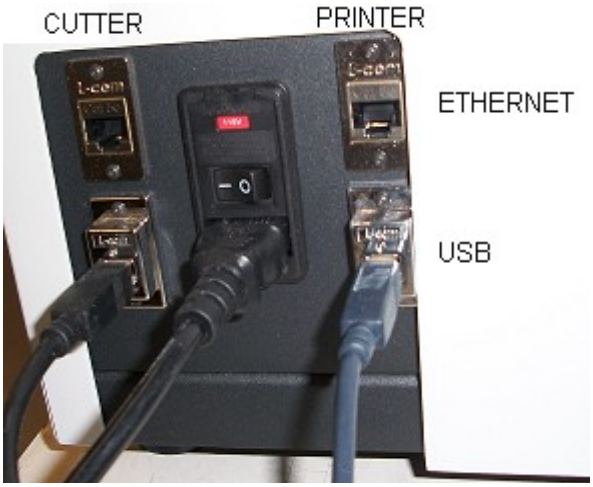
- Do not plug in devices or communication cables until told to do so in the installation instructions. If you do you will probably need to call tech support to make your system work.
- Install Illustrator artwork design package using the cd you purchased. Not provided by ADSI.
- Insert ADSI.CD. When you select a link from the web path displayed the Explorer will ask you if you want to run the program twice. Click on run button both times. A web page will appear select installations in following order:
- If you don't have Adobe reader installed you can install it from the first link.
- Next Open the SR Users Manual. Print out section 3.
- Install Epson Printer Driver setup
- Wait until software asks and then plug usb cable from computer to printer.
- Run Wasatch installation setup.
- Install Inkscape
- Install Wasatch Color Profiles
- Install Cutter Driver. When told to connect usb or Ethernet cable.
- Install Remote Panel
- Install Port Redirector printer driver

- Setup hot folder server

#### 4.1.5.1 Do not plug in devices

Note: Do not plug in devices or communication cables until told to in the installation instructions.

If you plug in the cables before you are asked to you will have trouble getting drivers loaded and will probably have to call technical support to get drivers installed.



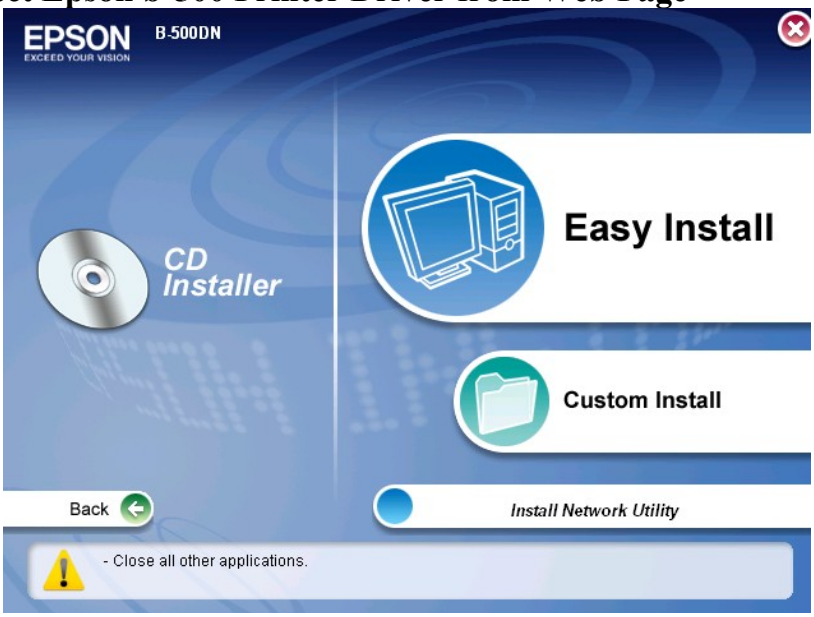

#### 4.1.5.2 Install Illustrator

If you are using Adobe Illustrator It must be installed before you start. Since this program is not provided by ADSI. Follow installation instructions provided by Adobe.

#### 4.1.5.3 Insert CD

Insert the ADSI Driver CD that came with the SR. A web page will appear with links to install software in yellow. Select the links and click on run when directed to by the following installation instructions. If the web page does not appear use the start > My Computer and right click on the CD drive and select Autorun or double click on the srhome in the root directory of the CD.

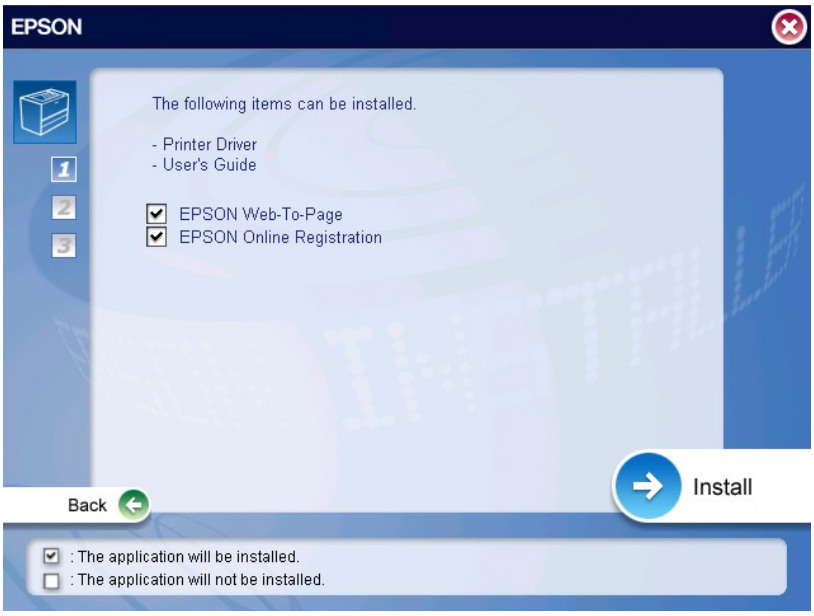
### 4.1.5.4 Select Epson b-500 Printer Driver from Web Page



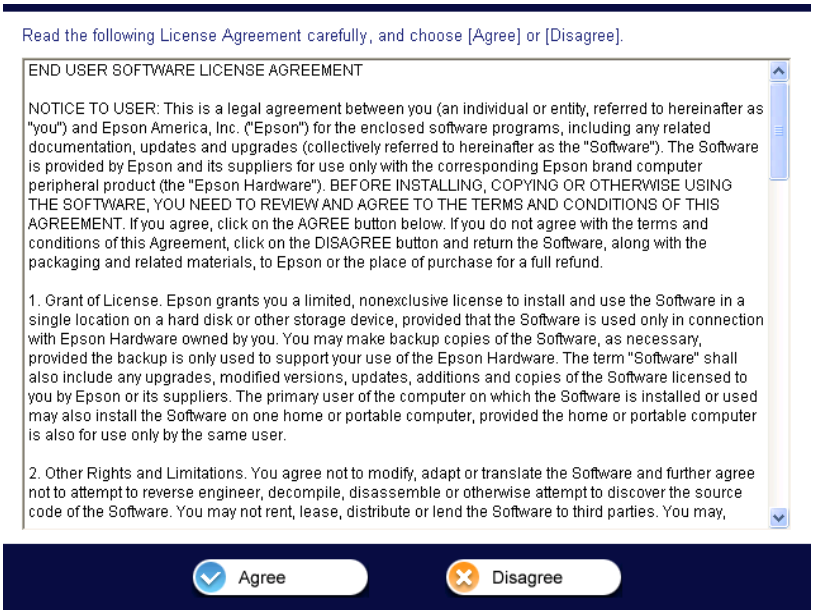

Click on Easy Install

click on Local if you connected printer via usb and Network if you connected printer via Ethernet.

'




Click on Install.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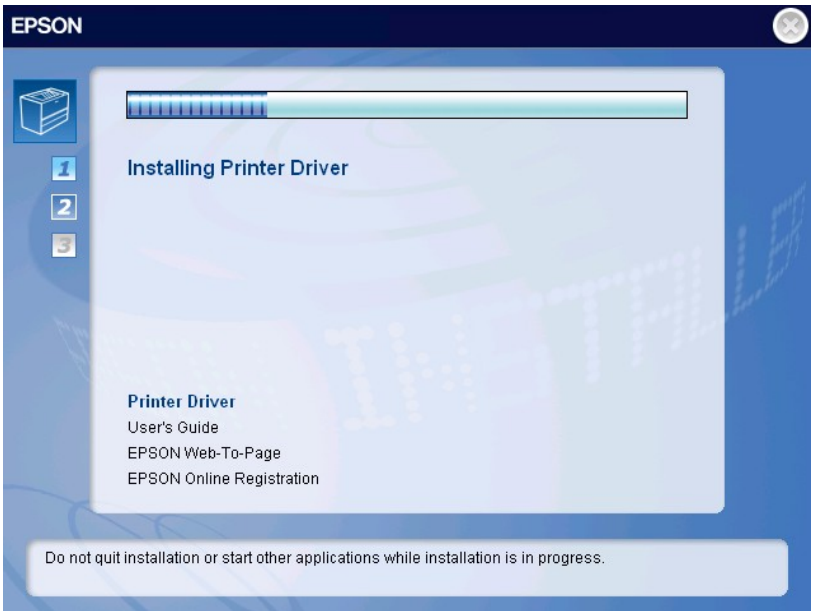
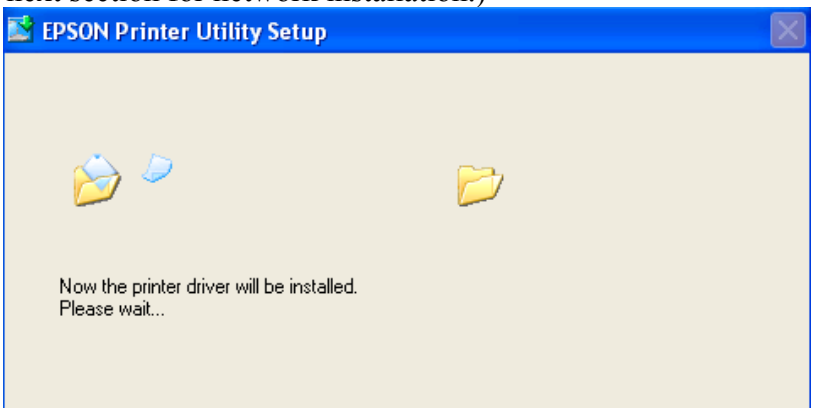
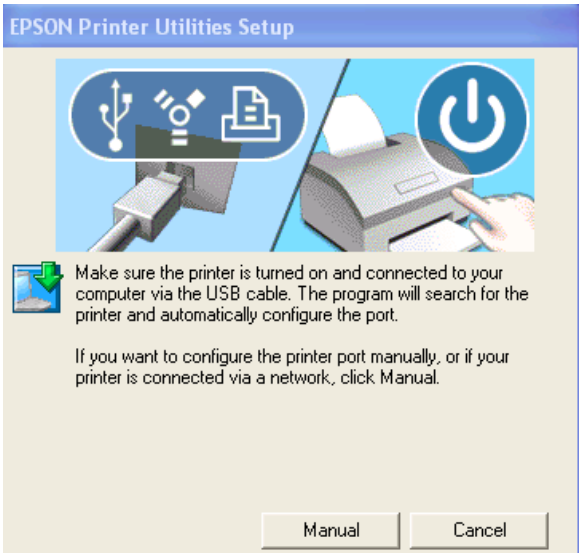


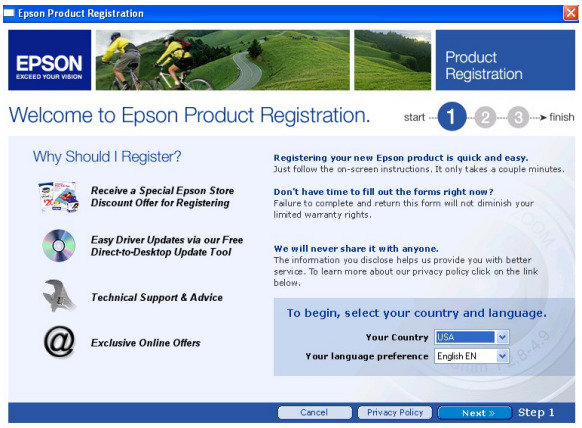

Wait (skip to next section for network installation.)



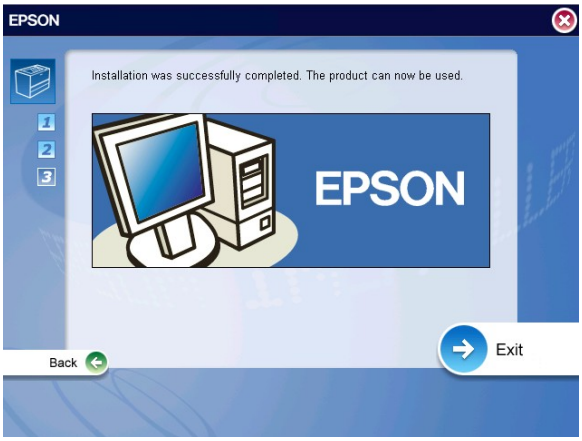

Wait


EPSON Printer Utilities Setup
Make sure the printer is turned on and connected to your computer via the USB cable. The program will search for the printer and automatically configure the port.
If you want to configure the printer port manually, or if your printer is connected via a network, click Manual.
Manual
Cancel

Plug in usb cable from printer to computer


Epson Product Registration
EPSON
EXCEED YOUR VISION
Product Registration
Welcome to Epson Product Registration.
start 1 2 3 finish
Why Should I Register?
Receive a Special Epson Store Discount Offer for Registering
Easy Driver Updates via our Free Direct-to-Desktop Update Tool
Technical Support & Advice
Exclusive Online Offers
Registering your new Epson product is quick and easy.
Just follow the on-screen instructions. It only takes a couple minutes.
Don't have time to fill out the forms right now?
Failure to complete and return this form will not diminish your limited warranty rights.
We will never share it with anyone.
The information you disclose helps us provide you with better service. To learn more about our privacy policy click on the link below.
To begin, select your country and language.
Your Country USA
Your language preference English EN
Cancel
Privacy Policy
Next »
Step 1

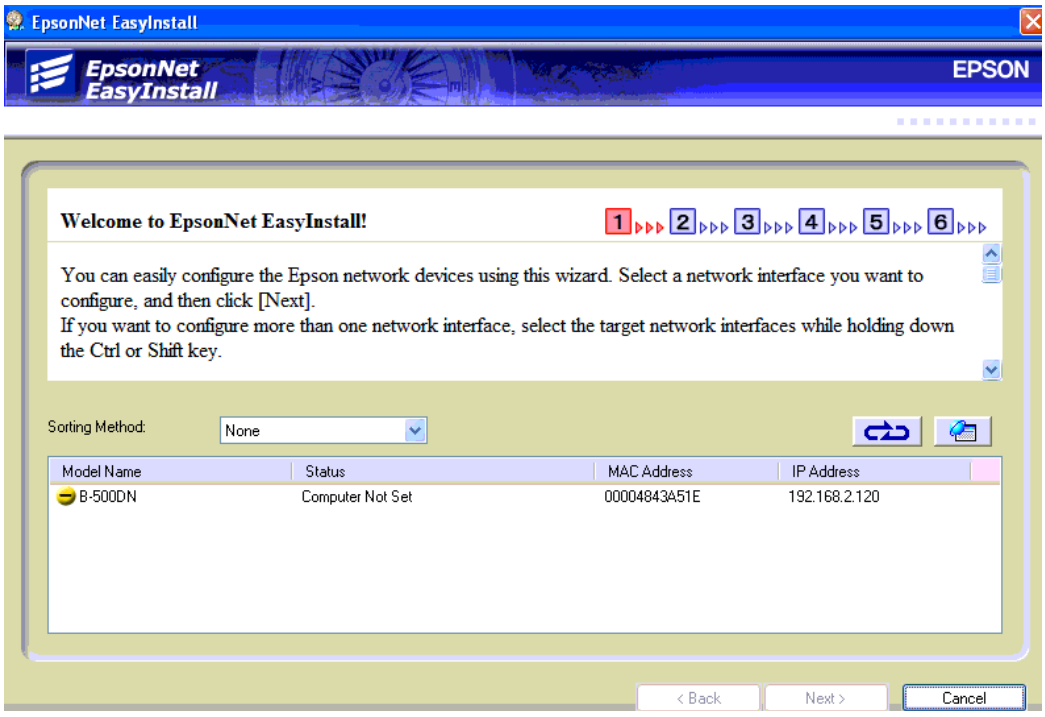
Register your software if desired.



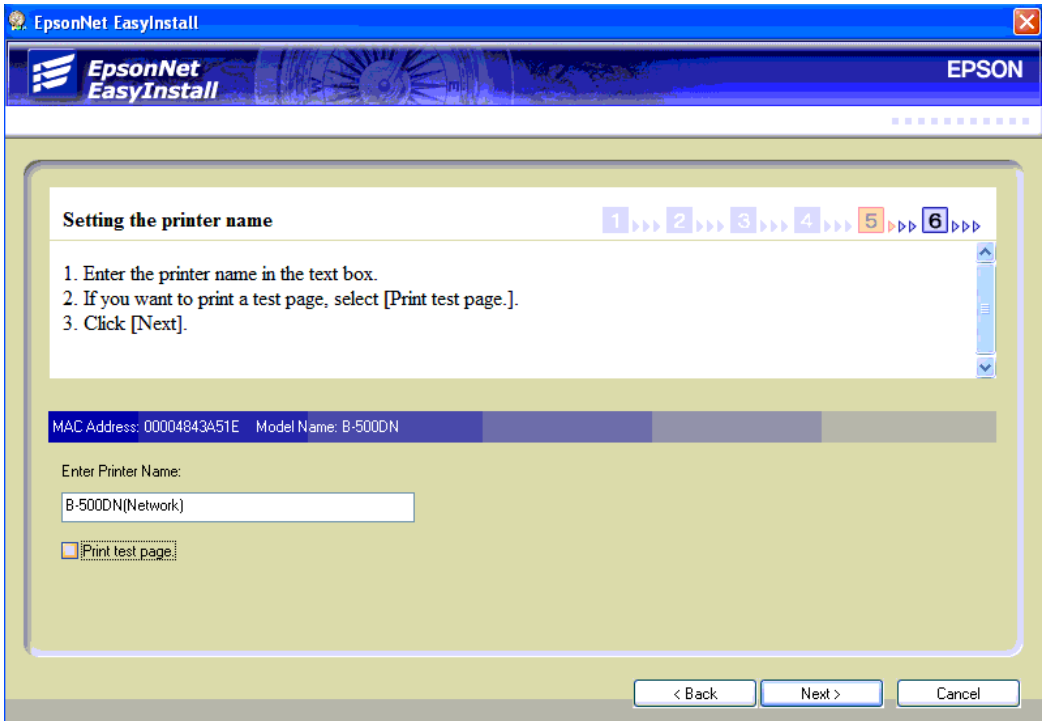

Click Exit
Skip next section

### 4.1.5.5 Network Printer Driver Instructions

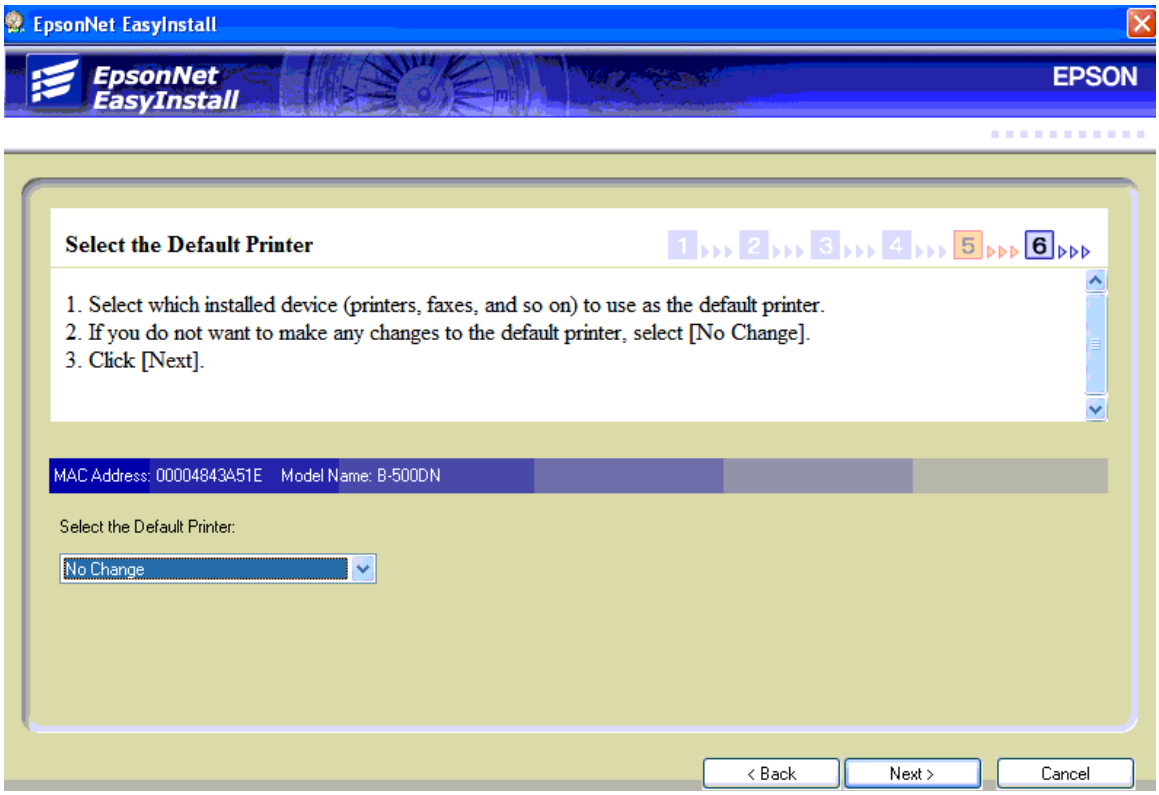
Connect your b500 printer to network.


EpsonNet EasyInstall
EpsonNet EasyInstall
EPSON
Welcome to EpsonNet EasyInstall!
1 2 3 4 5 6
You can easily configure the Epson network devices using this wizard. Select a network interface you want to configure, and then click [Next].
If you want to configure more than one network interface, select the target network interfaces while holding down the Ctrl or Shift key.
Sorting Method:
None
Model Name
Status
MAC Address
IP Address
B-500DN
Computer Not Set
00004843A51E
192.168.2.120
< Back
Next >
Cancel

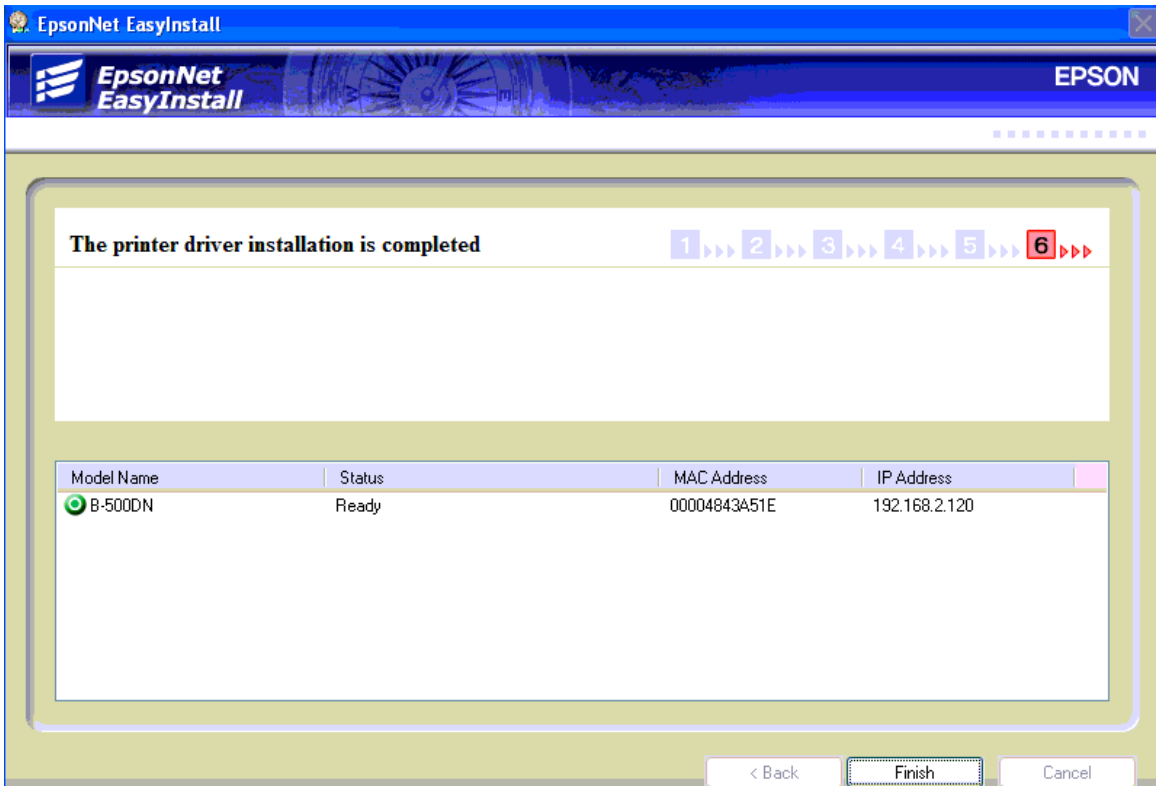
Select the b-500dn printer, then click next


EpsonNet EasyInstall
EpsonNet EasyInstall
EPSON
Setting the printer name
1 2 3 4 5 6
1. Enter the printer name in the text box.
2. If you want to print a test page, select [Print test page.].
3. Click [Next].
MAC Address: 00004843A51E Model Name: B-500DN
Enter Printer Name:
B-500DN(Network)
Print test page
< Back
Next >
Cancel

If you do not have paper tray loaded uncheck the print test page.. Then click Next.

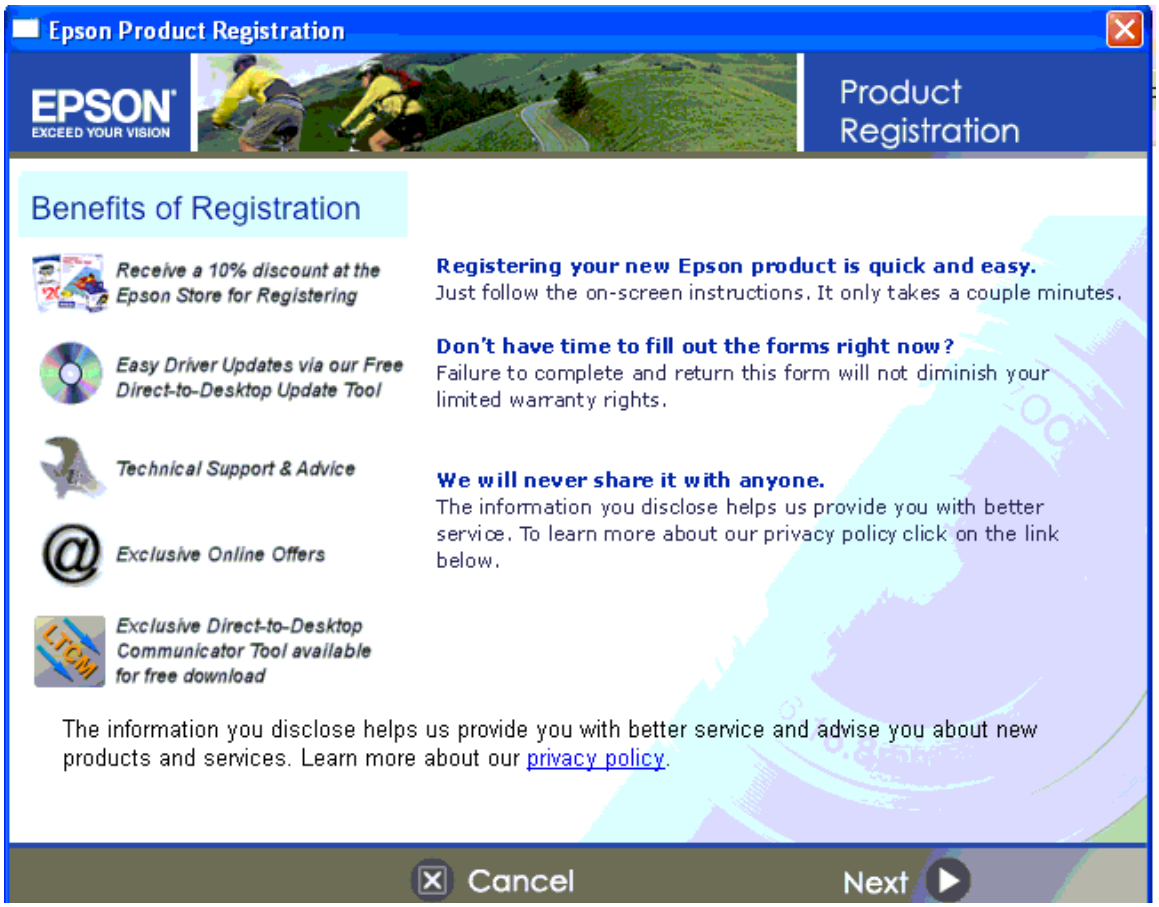

EpsonNet EasyInstall
EPSON
Select the Default Printer
1. Select which installed device (printers, faxes, and so on) to use as the default printer.
2. If you do not want to make any changes to the default printer, select [No Change].
3. Click [Next].
MAC Address: 00004843A51E Model Name: B-500DN
Select the Default Printer:
No Change
< Back
Next >
Cancel

Select No Change in drop down and click next

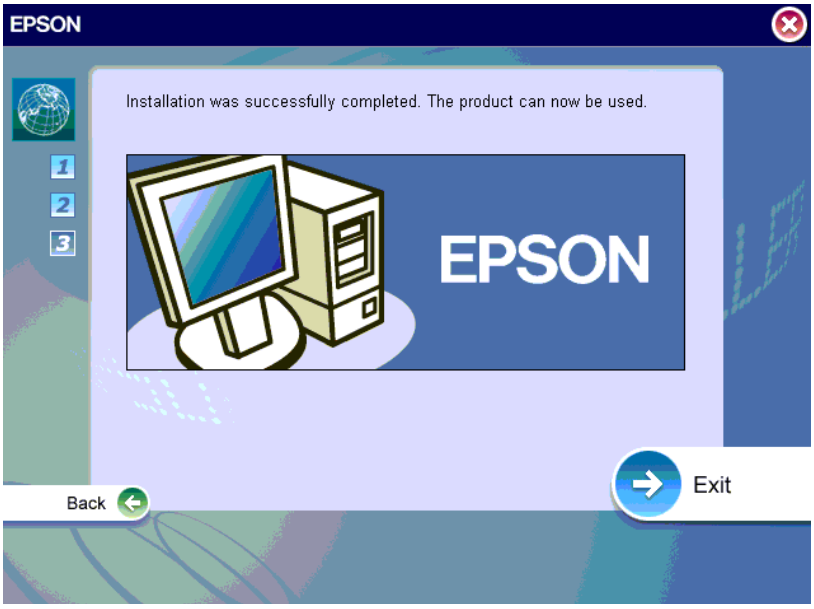



Click Finish

Wait for driver installation to complete.


Epson Product Registration
EPSON
EXCEED YOUR VISION
Product Registration
Benefits of Registration
Receive a 10% discount at the Epson Store for Registering
Easy Driver Updates via our Free Direct-to-Desktop Update Tool
Technical Support & Advice
Exclusive Online Offers
Exclusive Direct-to-Desktop Communicator Tool available for free download
Registering your new Epson product is quick and easy.
Just follow the on-screen instructions. It only takes a couple minutes.
Don't have time to fill out the forms right now?
Failure to complete and return this form will not diminish your limited warranty rights.
We will never share it with anyone.
The information you disclose helps us provide you with better service. To learn more about our privacy policy click on the link below.
The information you disclose helps us provide you with better service and advise you about new products and services. Learn more about our privacy policy.
Cancel
Next

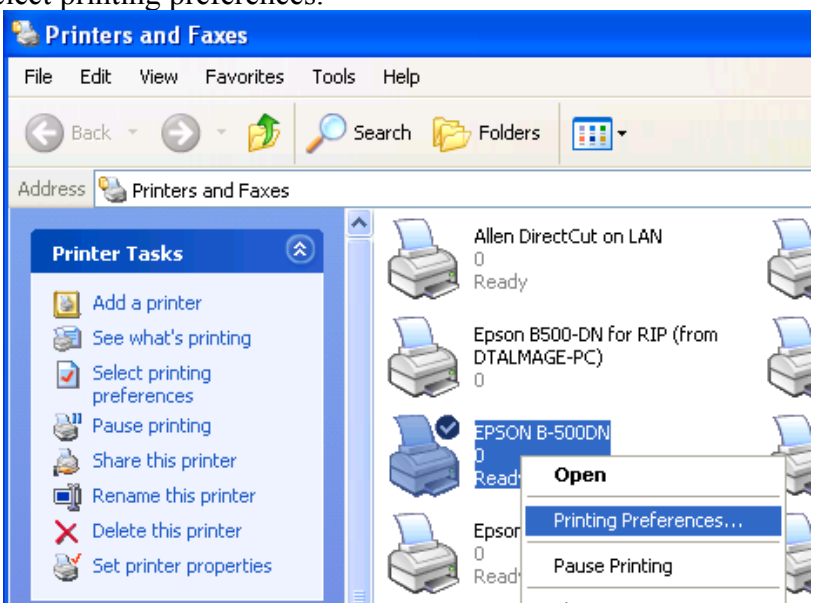
Click Next to register your print or cancel to skip registration.



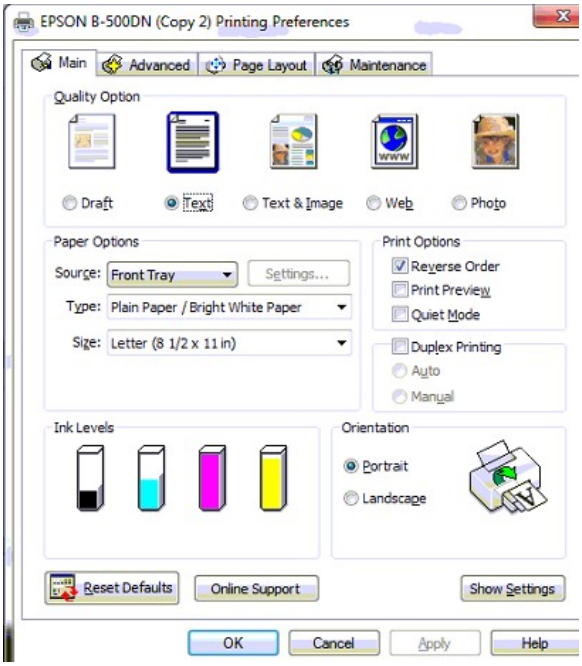

Click Exit

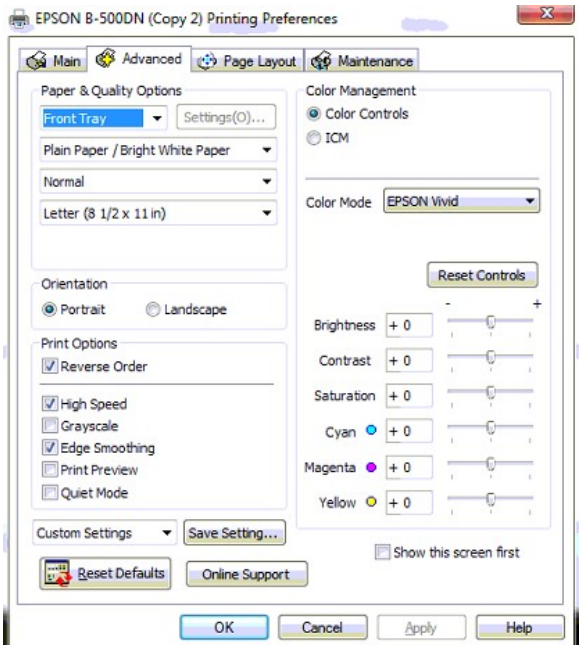
### 4.1.5.6 Setting Printer Driver Properties

Click on Start > control panel > printer and faxes or printers  Right click on the b500dn printer and select printing preferences.



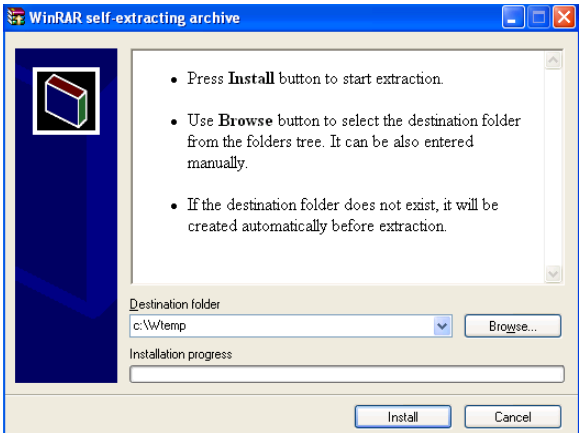

Set Printing Preferences as follows:



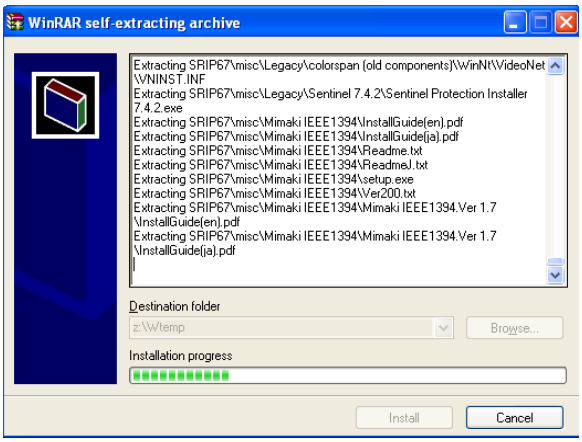



### 4.1.5.7 Select Wasatch from Web Page

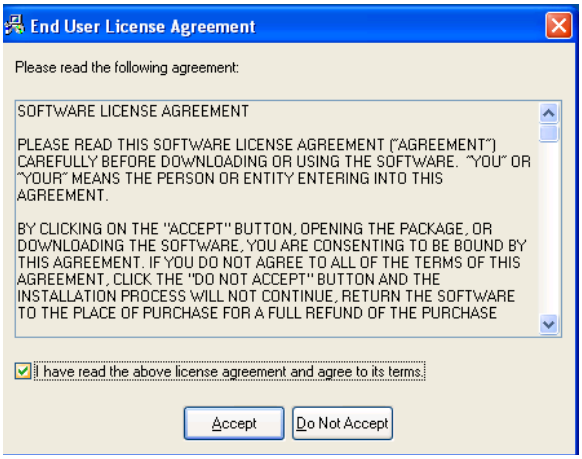
Select destination folder for unzipped cd. Suggest using default c:\wtemp.


WinRAR self-extracting archive
Press Install button to start extraction.
Use Browse button to select the destination folder from the folders tree. It can be also entered manually.
If the destination folder does not exist, it will be created automatically before extraction.
Destination folder
c:\Wtemp
Browse...
Installation progress
Install
Cancel

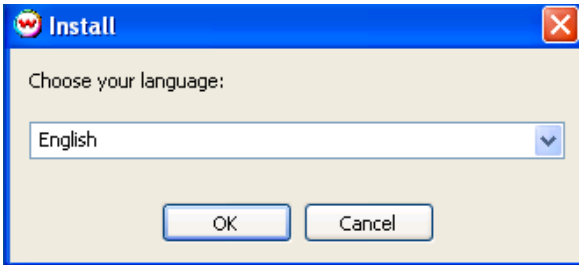
Cick Install.



There will be a long wait while the cd image is unpacked.


End User License Agreement
Please read the following agreement:
SOFTWARE LICENSE AGREEMENT
PLEASE READ THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") CAREFULLY BEFORE DOWNLOADING OR USING THE SOFTWARE. "YOU" OR "YOUR" MEANS THE PERSON OR ENTITY ENTERING INTO THIS AGREEMENT.
BY CLICKING ON THE "ACCEPT" BUTTON, OPENING THE PACKAGE, OR DOWNLOADING THE SOFTWARE, YOU ARE CONSENTING TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS AGREEMENT, CLICK THE "DO NOT ACCEPT" BUTTON AND THE INSTALLATION PROCESS WILL NOT CONTINUE, RETURN THE SOFTWARE TO THE PLACE OF PURCHASE FOR A FULL REFUND OF THE PURCHASE
I have read the above license agreement and agree to its terms.
Accept
Do Not Accept

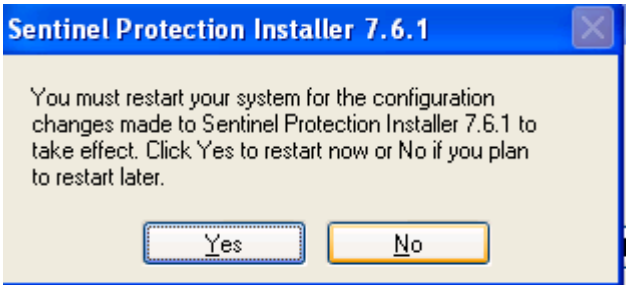
Check I have read... Click Accept to accept license agreement



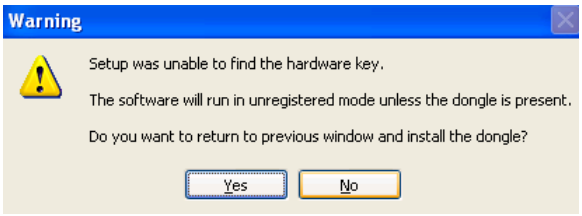

Select installation language from drop down.

Wasatch SoftRIP 6.7 Setup
Welcome to Setup!
This will install Wasatch SoftRIP 6.7 onto your system. Please click on Install to start the installation or click on Exit Setup to cancel installation.
Install Hardware Key
Install SoftRIP
Browse this CD
Exit Setup

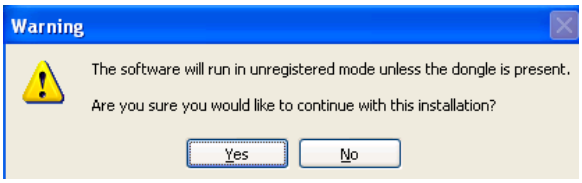
First select Install Hardware Key


Sentinel Protection Installer 7.6.1
You must restart your system for the configuration changes made to Sentinel Protection Installer 7.6.1 to take effect. Click Yes to restart now or No if you plan to restart later.
Yes
No

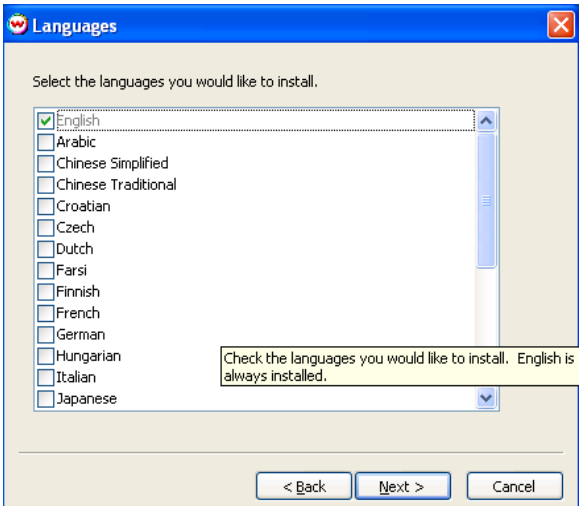
Since we are going to have to restart later just answer Click No at this point. Now insert Wasatch hardware key. On previous screen click on Install SoftRIP.


Warning
Setup was unable to find the hardware key.
The software will run in unregistered mode unless the dongle is present.
Do you want to return to previous window and install the dongle?
Yes
No

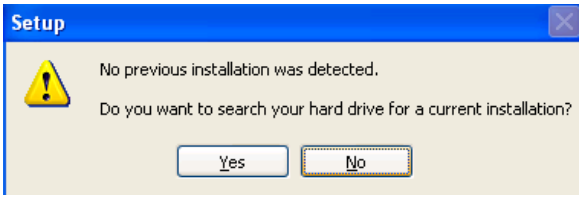
Since we did not restart a key will not be found. You can ignore this error and answer No.


Warning
The software will run in unregistered mode unless the dongle is present.
Are you sure you would like to continue with this installation?
Yes
No

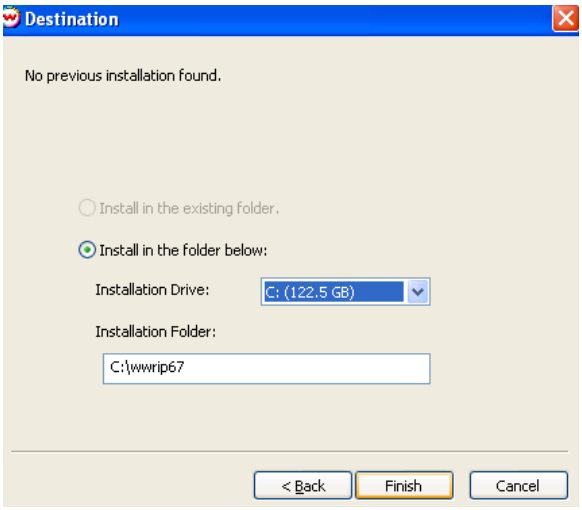
Click Yes.




Select additional installation languages if desired




Click Yes if you have installed Wasatch before on this computer. Otherwise click No.




Use default installation folder.

Congratulations!
Setup was completed successfully.
Wasatch Computer Technology can be reached by:
- Phone: 800-683-8214 / 801-575-8043, Monday through Friday
8:30 A.M. to 5:30 P.M. Mountain Standard Time
- Fax: 801-575-8075
- e-mail: wct@wasatch.com
- Website: www.wasatch.com
OK

Wasatch installation is now complete.

### 4.1.5.8 Select Inkscape and Color Profiles from Web Page

Select the Inkscape link from the web page. Follow on screen prompts

Select the Wasatch Color Profiles for Epson B500 link from the web page

### 4.1.5.9 Select Cutter Driver

Do not connect the Axxis finisher to the computer until told to do so by the cutter driver. Connection from PC to Axxis Finisher is either by USB or Ethernet. If you want to read about using the Ethernet port for the cutter see the document Website Copy / CD Copy.

Select the cutter driver link from web page

Click Yes to auto install question

When asked during this install connect computer to cutter port of SR

Select the Remote Panel link from the web page

### 4.1.5.10 Install Port Redirector Printer Driver

Left click on start, right click on My Computer , left click on Properties

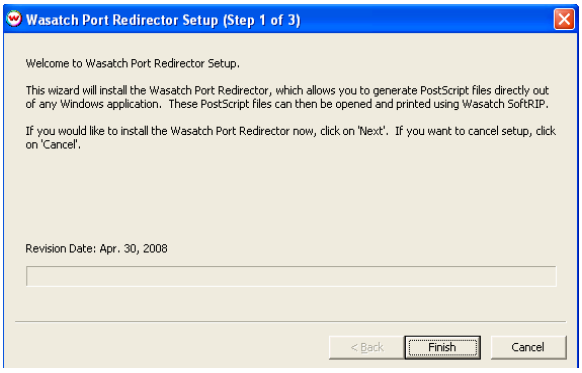
On the system properties page determine if your computer is 64 bit or 32 bit. If you do not have any indication on the page displayed you have a 32 bit operating system. Close this page.

Click on Start / My Computer

Navigate to C:\Wtemp\SRIP67\Wasatch Port Redirector

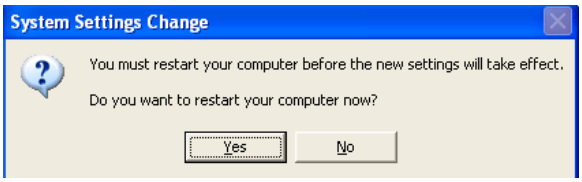
Double click on 64 bit or 32 bit directory as determined in last step.

Double click on setup:


Wasatch Port Redirector Setup (Step 1 of 3)
Welcome to Wasatch Port Redirector Setup.
This wizard will install the Wasatch Port Redirector, which allows you to generate PostScript files directly out of any Windows application. These PostScript files can then be opened and printed using Wasatch SoftRIP.
If you would like to install the Wasatch Port Redirector now, click on 'Next'. If you want to cancel setup, click on 'Cancel'.
Revision Date: Apr. 30, 2008
< Back
Finish
Cancel

The port redirector installation requires a reboot or restart of spooler.

Click Ok


System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

Click Yes

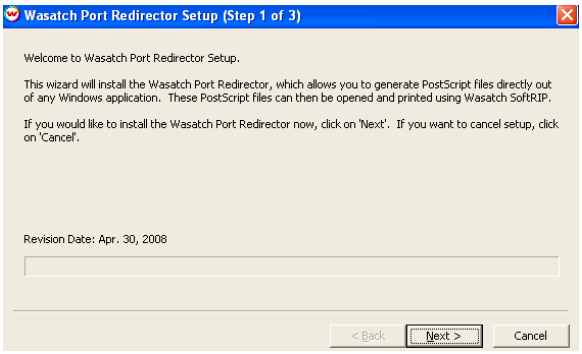
Wasatch Port Redirector
Wasatch Port Redirector installation is incomplete.
To complete the installation, Windows must now reboot.
After rebooting, please re-run the installation program, which will complete the installation.
OK

After restart of computer Click on Start / my computer

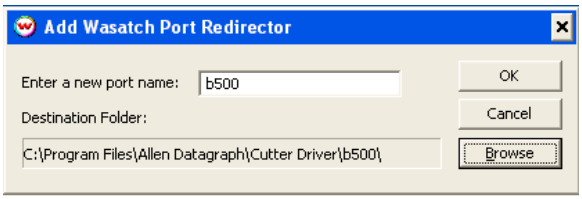
Navigate to C:\Wtemp\SRIP67\Wasatch Port Redirector

Double click on 64 bit or 32 bit directory as determined in last step.

Double click on setup:


Wasatch Port Redirector Setup (Step 1 of 3)
Welcome to Wasatch Port Redirector Setup.
This wizard will install the Wasatch Port Redirector, which allows you to generate PostScript files directly out of any Windows application. These PostScript files can then be opened and printed using Wasatch SoftRIP.
If you would like to install the Wasatch Port Redirector now, click on 'Next'. If you want to cancel setup, click on 'Cancel'.
Revision Date: Apr. 30, 2008
< Back
Next >
Cancel

Click Next

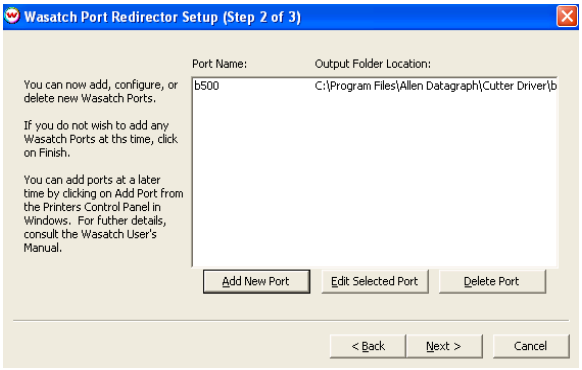



Enter name b500 for port name

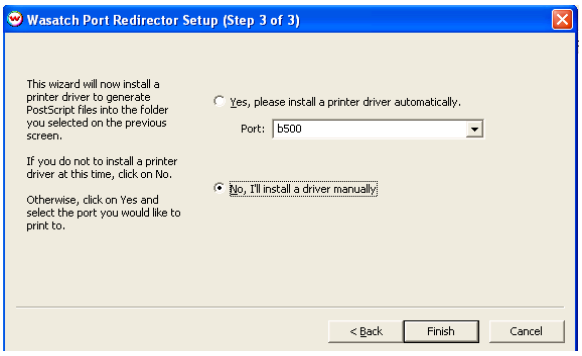
Click on Browse

Select directory C:\Program Files\Allen Datagraph\Cutter Driver\b500

Then click on Ok


Wasatch Port Redirector Setup (Step 2 of 3)
You can now add, configure, or delete new Wasatch Ports.
If you do not wish to add any Wasatch Ports at ths time, click on Finish.
You can add ports at a later time by clicking on Add Port from the Printers Control Panel in Windows. For futher details, consult the Wasatch User's Manual.
Port Name:
Output Folder Location:
b500
C:\Program Files\Allen Datagraph\Cutter Driver\b
Add New Port
Edit Selected Port
Delete Port
< Back
Next >
Cancel

Click Next

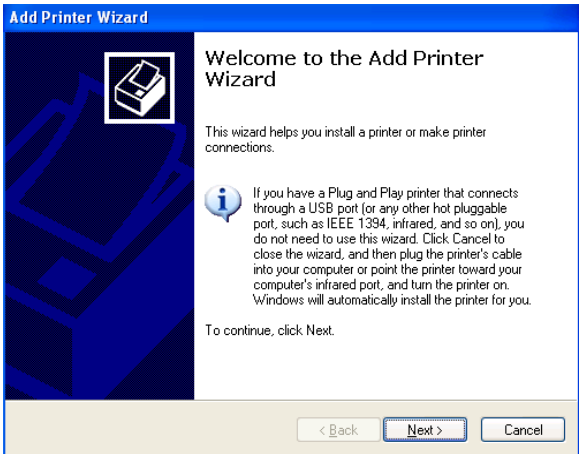

Wasatch Port Redirector Setup (Step 3 of 3)
This wizard will now install a printer driver to generate PostScript files into the folder you selected on the previous screen.
If you do not to install a printer driver at this time, click on No.
Otherwise, click on Yes and select the port you would like to print to.
Yes, please install a printer driver automatically.
Port:
b500
No, I'll install a driver manually.
< Back
Finish
Cancel

Auto install is for a different workflow, so click No and Finish.

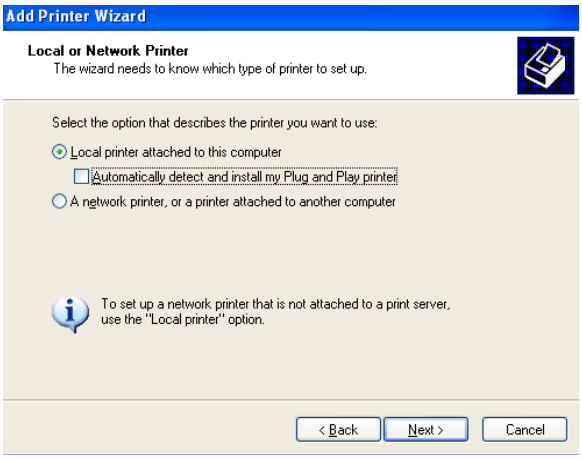
Now we manually add the RIP printer driver

Click on Start > Control panel > Printer and faxes or Printers

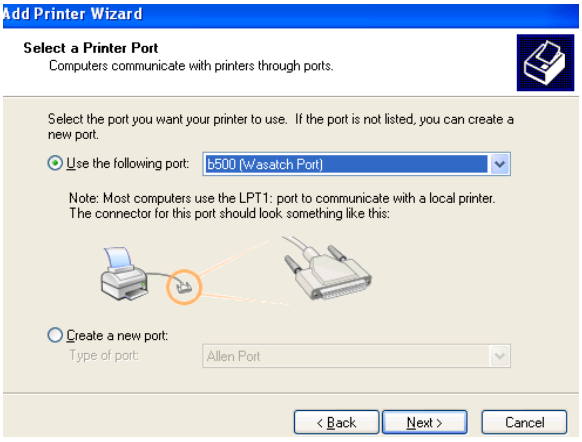
Click on Add Printer


Add Printer Wizard
Welcome to the Add Printer Wizard
This wizard helps you install a printer or make printer connections.
If you have a Plug and Play printer that connects through a USB port (or any other hot pluggable port, such as IEEE 1394, infrared, and so on), you do not need to use this wizard. Click Cancel to close the wizard, and then plug the printer's cable into your computer or point the printer toward your computer's infrared port, and turn the printer on. Windows will automatically install the printer for you.
To continue, click Next.
< Back
Next >
Cancel

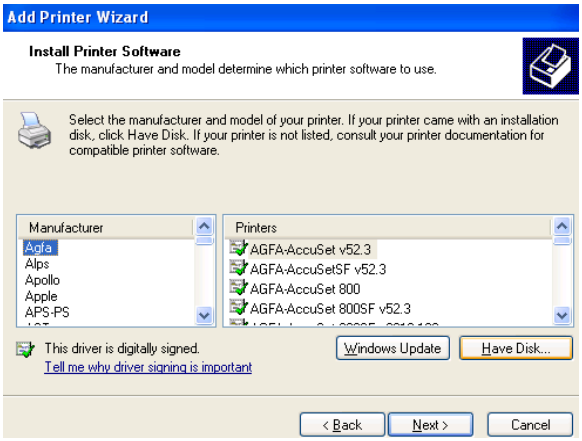
Click Next


Add Printer Wizard
Local or Network Printer
The wizard needs to know which type of printer to set up.
Select the option that describes the printer you want to use:
Local printer attached to this computer
Automatically detect and install my Plug and Play printer
A network printer, or a printer attached to another computer
To set up a network printer that is not attached to a print server, use the "Local printer" option.
< Back
Next >
Cancel

Select Local printer and uncheck Automatically detect and install my plug and play printer, then click Next


Add Printer Wizard
Select a Printer Port
Computers communicate with printers through ports.
Select the port you want your printer to use. If the port is not listed, you can create a new port.
Use the following port:
b500 (Wasatch Port)
Note: Most computers use the LPT1: port to communicate with a local printer. The connector for this port should look something like this:
Create a new port:
Type of port:
Allen Port
< Back
Next >
Cancel

Select the b500 port created above.

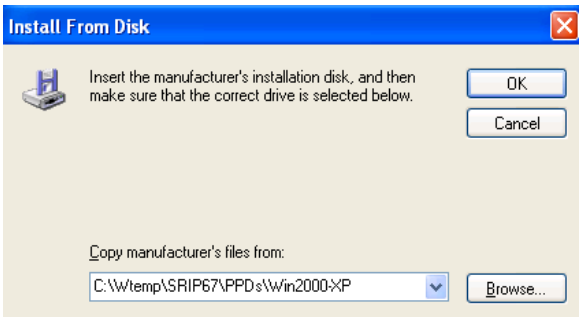

Add Printer Wizard
Install Printer Software
The manufacturer and model determine which printer software to use.
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for compatible printer software.
Manufacturer
Agfa
Alps
Apollo
Apple
APS-PS
Printers
AGFA-AccuSet v52.3
AGFA-AccuSetSF v52.3
AGFA-AccuSet 800
AGFA-AccuSet 800SF v52.3
This driver is digitally signed.
Tell me why driver signing is important
Windows Update
Have Disk...
< Back
Next >
Cancel

Click on Have Disk

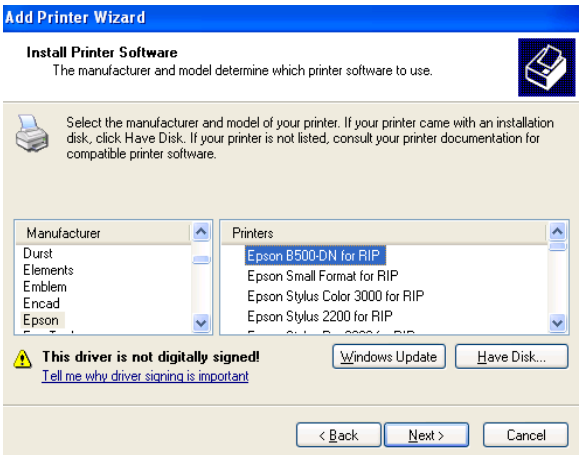
Click on Browse and select one of the two directories below depending on your operating system

C\Wtemp\SRIP67\PPDs\Win2000-XP

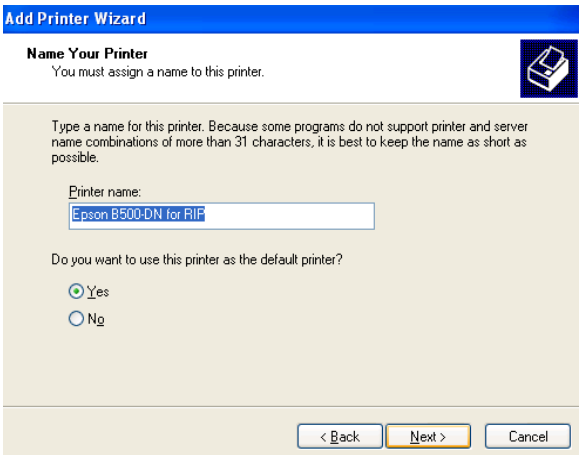
C:\Wtemp\SRIP67\PPDs\Win 7 – Vista



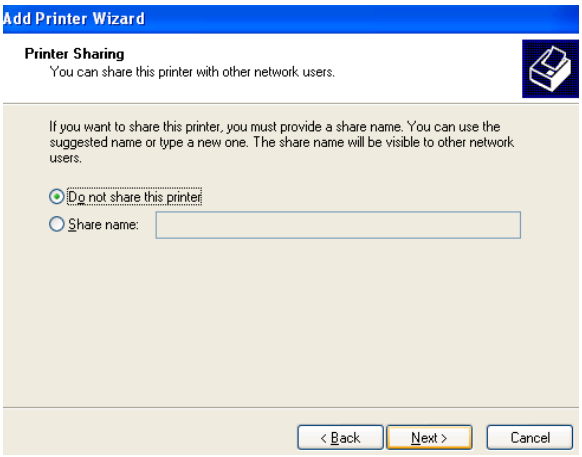

Click Ok


Add Printer Wizard
Install Printer Software
The manufacturer and model determine which printer software to use.
Select the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for compatible printer software.
Manufacturer
Durst
Elements
Emblem
Encad
Epson
Printers
Epson B500-DN for RIP
Epson Small Format for RIP
Epson Stylus Color 3000 for RIP
Epson Stylus 2200 for RIP
This driver is not digitally signed!
Tell me why driver signing is important
Windows Update
Have Disk...
< Back
Next >
Cancel

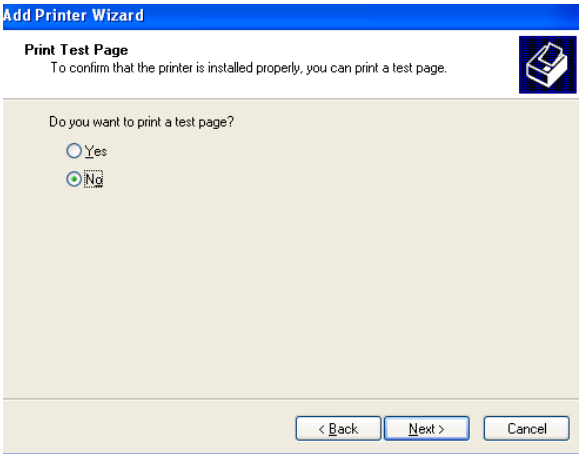
Select manufacturer Epson and select printer Epson B500-DN for RIP.


Add Printer Wizard
Name Your Printer
You must assign a name to this printer.
Type a name for this printer. Because some programs do not support printer and server name combinations of more than 31 characters, it is best to keep the name as short as possible.
Printer name:
Epson B500-DN for RIP
Do you want to use this printer as the default printer?
Yes
No
< Back
Next >
Cancel

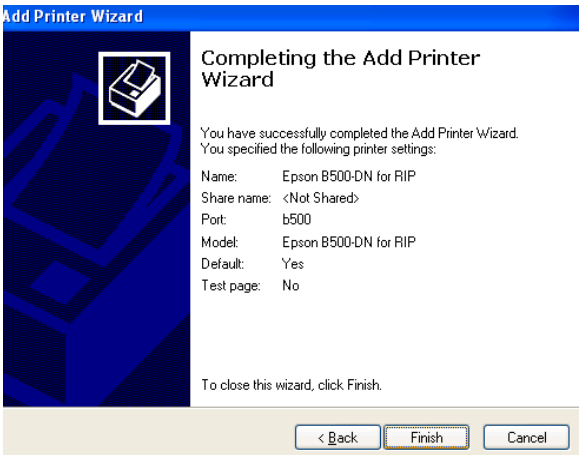
Select No and then Next


Add Printer Wizard
Printer Sharing
You can share this printer with other network users.
If you want to share this printer, you must provide a share name. You can use the suggested name or type a new one. The share name will be visible to other network users.
Do not share this printer
Share name:
< Back
Next >
Cancel

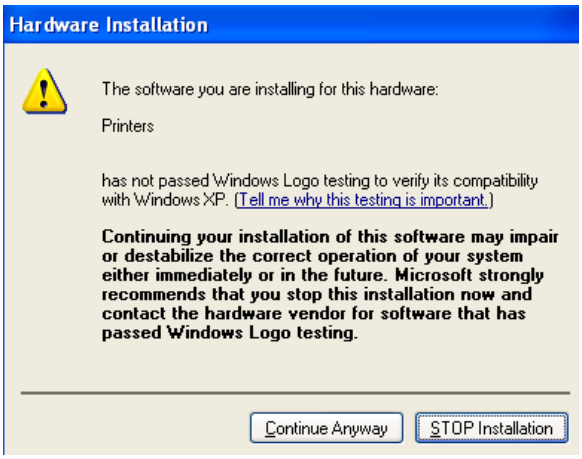
Select Do not share and Next.


Add Printer Wizard
Print Test Page
To confirm that the printer is installed properly, you can print a test page.
Do you want to print a test page?
Yes
No
< Back
Next >
Cancel

Select No test page and Next



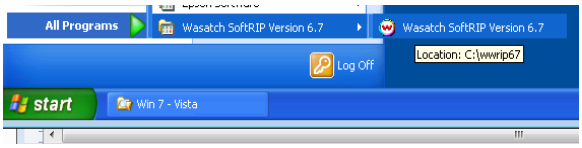

Click Finish


Hardware Installation
The software you are installing for this hardware:
Printers
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

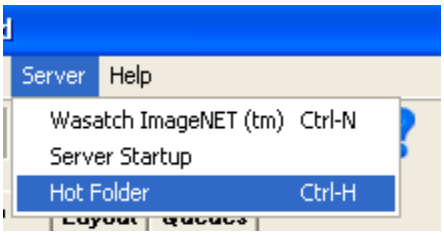
Click Continue Anyway to allow driver installation to complete

### 4.1.5.11 Configuration of Wasatch Hot Folder

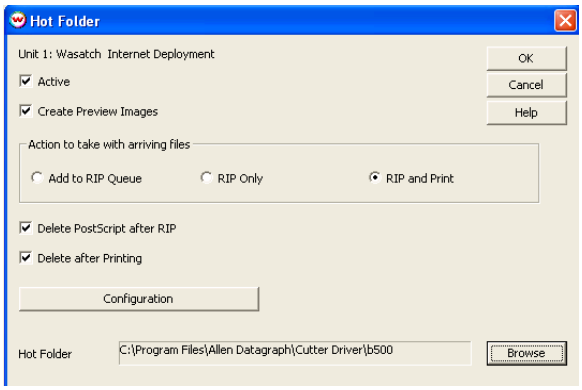
First setup hot folder. Click on Start Wasatch. Start > All programs > Wastatch Softrip > Wasatch Softrip.




Select Unit 1 from drop down menu




Click on Server, Hot Folder




Select Active, Create Preview Images, Rip and Print, Delete Postscript after RIP, Delete after Printing. Click on Browse and select Hot Folder defined earlier

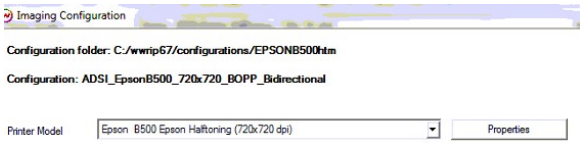
C:\Program Files\Allen Datagraph\Cutter Driver\b500

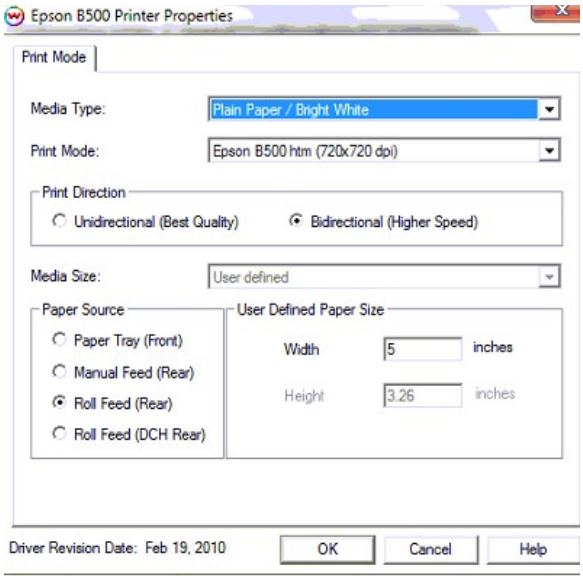
Click Ok

### 4.1.5.12 Setting Up the B500 in Wasatch

To setup your Wasatch SoftRIP to manage your Epson B500 printer, follow these instructions:

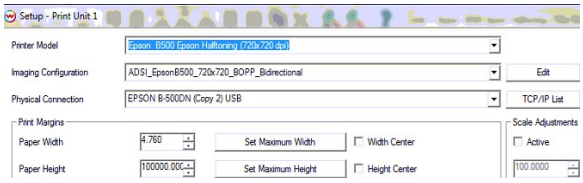
1. Wasatch SoftRIP is still open.
2. Click on the setup icon
3. Click the PRINTER MODEL dropdown menu and select EPSON then B500DN from this menu.
4. Change the physical connection to EBSON B-500DN
5. Change Imaging configuration to ADSI_EpsonB500_720x720_BOPP_Bidirectional. Note if you have matte media loaded use the matte imaging configuration.
6. Click EDIT and then PROPERTIES. Make sure paper source is set to Roll Feed (rear) and width is either 4 to 8.5 depending on media width loaded.






If you want to change dpi, select the dpi you want from Print Mode drop down. You can also increase to 1440 x 720 by changing Media Type to Photo Quality Ink Jet Paper and then select DPI with Print Mode.

7. Click Ok, Ok,
8. Click Set Maximum Width and uncheck Width Center. Click on Set Maximum Height and uncheck Height Center.




9. Click Ok.

### 4.1.6 Software Updates

From time to time, ADSI may update software, You can check for updates after the product ships will be available on the tech support section of the http://allendatagraph.com web site. Remember the rule: if its not broken, don't fix it. You can check for updates by clicking on "What's New in Tech Support" link at the top of the online documents page.

To update to a later version of software when recommended to do so by the tech support department, go to the web site. Click on Tech Support, then Online Documents.

Select Axxis SR from list of selections.

Find the software update and click on it to download the setup program from the web site.

# 5 Operation of the i-TECH AXXIS SR System

## 5.1 Setting Up Your Label Job

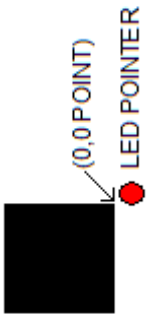
The target should be a black rectangle on white media or a contrasting color to background. See colors in Web Site Copy or CD Copy. The recommended Mark Size is 0.25 inch by 0.5 inch (6 mm x 12mm). When printing process colors on white media the best color is usually black.

The mark should be placed at least 0.25 inches (6 mm) from the edge of the media and the spacing between frames should be at least 0.25 inch (6 mm).

The number of rows and columns of labels between registration marks defines a "frame" of labels. A frame of labels can be one row or several rows of labels. There are several aspects to consider when deciding how many rows of labels to print on one page. The main consideration is the trade off between speed (it takes a about second to perform the find origin (FO) command and scan the registration mark) and registration accuracy. The more often you scan the registration mark (the closer the marks) the more accurate the cut registration will be. If the job allows for overprinting the cut line, then registration may be less critical and eliminating some of the registration marks can speed the job. Generally registration marks should be placed at least every 12 inches (305 mm) on Axxis. Best practice is to print registration marks for each row then adjust the cut job to skip one or more marks if desired. This procedure also insures equal spacing of the labels and gives complete flexibility for cutting. The distance between jobs, (the last cut line of the previous frame and the target on the next frame) must be between -4 and 4 inches (101 mm). If the distance between frames is less than the scan length, then the target must be outside of the area where the labels are printed. Maximum frame size is 10 inches (35.5 cm)

## 5.2 Explanation of SmartMark™

The theory of operation relies on the SmartMark™ sensor sending an analog signal to the embedded computer during a scan. The data is analyzed after the scan to automatically create a threshold, find the edge of the target and eliminate noise. The Axxis scans the mark in both x and y directions and calculates the intersection of the 2 scans. The Axxis computer then assigns that intersection as the 0,0 point of the Axxis coordinate system and matches that to the origin point (minimum x, minimum y) of the HPGL cut file.




The Axxis uses a special HPGL command, FO, to start the registration mark sensing function. It automatically re-registers the coordinate each time the FO HPGL command is received. As part of the setup a "x move between jobs" is input via the printer driver options which moves the sensor to the approximate position of the next copy's or next frame's registration mark. The Axxis expects the target for the next frame to be within ½ the scan distance of the end of the frame.

The interface prints a 2 inch x 0.25 inch target bar to locate the images in the print. The software should automatically find the first target and then proceed through the number of printed copies.

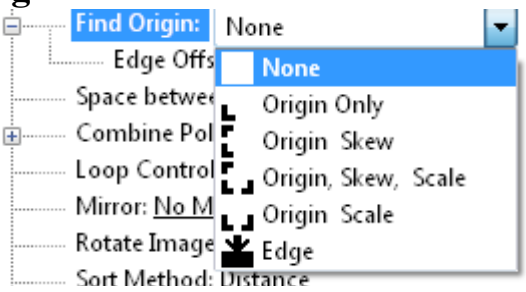
If you get a target error “tar1” displayed on the cutter front panel display, the Red LED pointer must be manually positioned with the joystick buttons at the approximate 0,0 coordinate position, then press select to reactivate cutter and clear error.. The SmartMark™ system automatically repositions the sensor for subsequent copies.

The positioning process must be repeated if the joystick buttons are used. This is helpful because it allows the system to be reinitialized when needed. Some printers require a leader between jobs and this feature is a very easy way to deal with the issue.

Once the LED pointer is positioned as shown, the SmartMark™ is ready to operate and will scan the registration mark when it receives a FO command in the job stream whether on the first copy or on subsequent copies. Since the FO command is embedded in the beginning of the cut file the scan of the registration mark is performed at the beginning of each copy or frame of labels and on subsequent copies.

## 5.3 Types of SmartMark™ Scanning

There are five types of SmartMark™ scanning available. They are shown in the image to the right. The scan type is selected in the printer driver preferences selected by clicking on properties in the Print and Cut Extensions.




**Origin Only** is the only type normally used on the SR.

**Origin Only** is used on printed media where you want to cut out preprinted labels. Origin Only does a alignment with the visual sensor at the origin only.

**Edge** is used when you are cutting blank label stock. Edge offset is used only when cutting blank labels on unprinted material. By selecting EDGE in the driver's printing preferences menu, the SmartMark sensor will detect the edge of the media instead of a registration mark, then offset into the media by that amount and cut your blank labels.

**Origin Skew** is used if the media is not necessarily loaded straight. This scans the origin and the skew mark and rotates the cut image to match the cut location at the two scanned locations. Since the Axxis keeps the media straight you do not normally need to scan the skew mark. No scaling of the cut image is performed with Origin Skew scanning.

**Origin Skew Scale** does alignment at the origin, rotation and scaling in both x and y axes are preformed. This scan type requires that the sensor size parameter be correct so that cut image is same size as printed image. Normally the y axis does not have any scaling errors on the printer so you do not need to correct the skew point and scaling at the scale point.

Origin Scale does alignment at the origin, rotation and x-axis only scaling at the scale point. It assumes that the scaling in the y-axis is correct. Normally you do not need to scan the Scale location because if you have a scaling error in your printer it is normally in

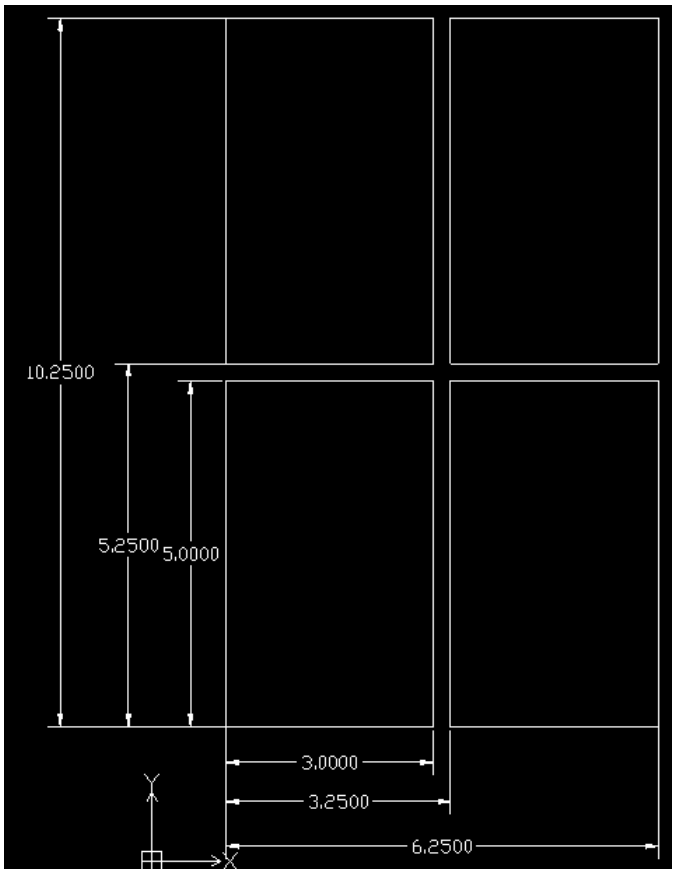
the x axis and it is very consistent. If the printer you are using has a x axis scaling error you can normally correct this either in the printer or you can use calibrate to printer to get the Axxis to cut the same size as the printer.

## 5.4 Designing Labels

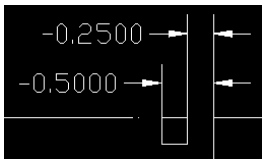
### 5.4.1 Planning Label

This tutorial will design a label for the Axxis SR with Inkscape and Illustrator.. It will show how to create a bleed area to minimize visual errors on the completed label. First we define our layout for a set of four 3x5 labels so we can create a set of locations in the artwork generation program workspace. We lay out the frame with the x axis (media movement going up and down on the screen and the y axis (operator/front to gear/back) left to right. The target in this orientation appears in the upper left corner of the screen. This allows for no rotation when the sending the job to the printer.

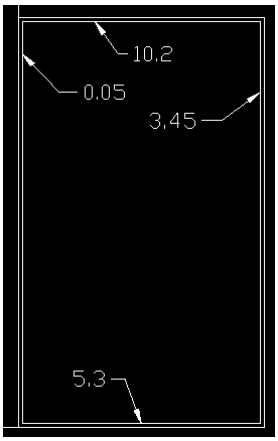
First create 4 labels that are 3x5 with 0.25 inch between each label




Then add the target in top left corner of 4 labels

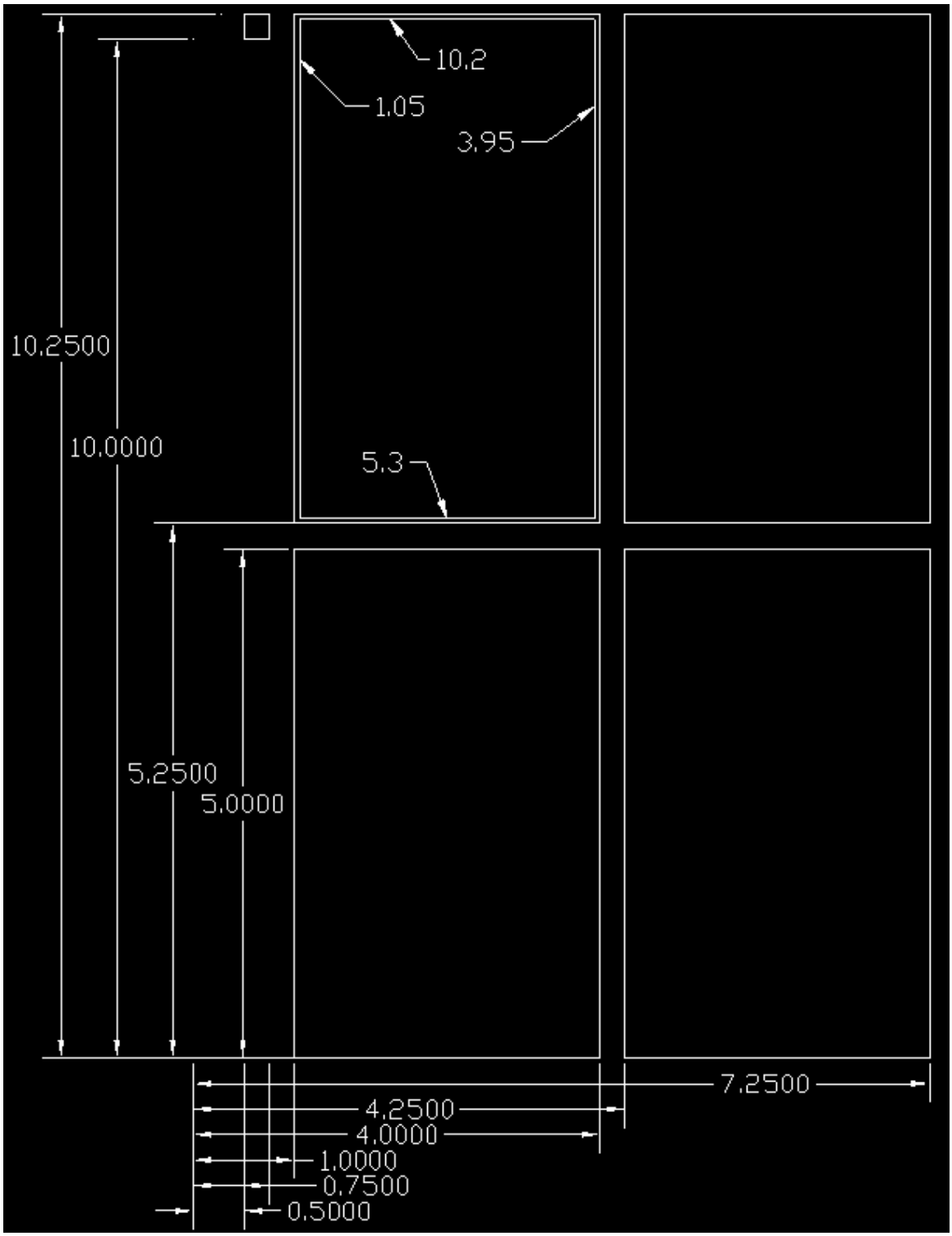



Then add 0.50 bleed on one label




Offset all left right coordinates by 1 inch so they are all positive.

Complete design for label layout is shown on next page.




Now that we have workspace planned choose program to design your artwork.

### 5.4.2 Using Inkscape

Open Inkscape by selecting icon from desktop.

Turn on layers menu (Layer > Layers or Shift + Ctrl/L)

Turn on Transform menu (Object >Transform or Shift + Ctrl/M)

Select File > Document Properties.  Change default units to inches (in)

Select custom size units in inches (in) set width = 7.25 and height to 10.45

On layer menu click on plus to create a second layer and name it dielines

Double click on original layer name (layer 1) and change its name to print

Select print layer.

Select rectangle tool and draw a rectangle of any size any position.

Select Object > fill and stroke (or shift + ctrl/F)

Select stroke paint and click on x for no stroke.

Select Fill and change color to C-0, m=0, y=0, k=100 a=100

Set rectangle parameters  rx=0, ry= 0, x=0.5,y=10,w=0.25, h= 0.5, stroke = none, fill = solid.

Select rectangle tool and draw a rectangle of any size.

Select Object → fill and stroke

Select stroke paint and click on x for no stroke.

Select Fill and change color to C-0, m=0, y=0, k=85 a=100

Change the rectangle properties to x=1, y=0, w=3,h=5,rx=0, ry=0

**Note: if you have a stroke on the edge of the printed target the print and cut will not line up.**

Import the bitmap of the image to print from the cd path (File >import or ctrl/I). (techsupport\axxis\sr\samples\inkscapelabel\ICON_Axxis_Cutter.bmp)

Using Object > rotate 90° and move to center image within the bleed area..

Select black square and imported label and group them with object group

copy label to following locations

1,5.25

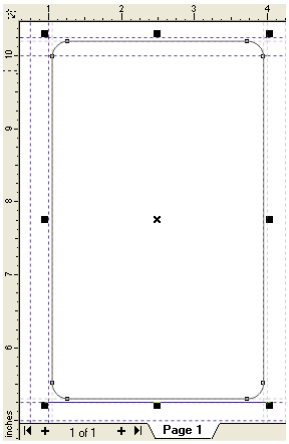
4.25,0

4.25,5.25

Lock the print layer.

Next create the die lines.  Click on the dielines layer on the layer selection.

Use rectangle tool and draw a rectangle of any size in window. Click on select arrow and enter 0.25 for H and W and 0.5 and 10 for X and Y. Click on node edit. and then your rectangle, and then convert to path . Select lower right corner of rectangle and then to delete the corner. Next select diagonal line and delete segment . Open fill and stroke menu with object > fill and stroke. Select object and set fill = x and stoke paint = flat color Click on white to deselect and you are left with target alignment mark.




Next use the rectangle tool to draw a rectangle anywhere, any size. Set rx = 0.25, ry = 0.25. Select the rectangle set X= 1.05, y= 5.3, w = 2.9, h=4.9

Using copy, paste, change x and y positions of copies of rounded rectangle to each of the following relative positions from the first rectangle.

1.05,0.05
4.3,5.3
4.3,0.05

The dielines layer is now complete.

Finally you have to make the print and the cut image the same size in the up/down direction on the screen. You do this by adding either a printed line or a cut line at the bottom of the image to make the sizes of the print and cut the same size.

This completes the image

### 5.4.3 Using Adobe Illustrator

Open Illustrator click on start > all programs > Adobe > Illustrator, and Select Create a new document from menu. (File > New)

Change units to inches by selecting inches from units drop down.

Click OK

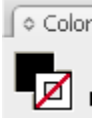
If rulers missing, click on view -> rulers (Ctrl/R)

If layer menu missing, click on window -> layers (F7)

If color menu missing, click on window -> color (F6)

Now create two layers. One called “dielines” and one called “print”. This is done from the layer window. Click on new layer button. Then rename the layers as dielines and print by double clicking on layer name, changing name and clicking on OK.

**First create the print.** On Layer menu select print layer

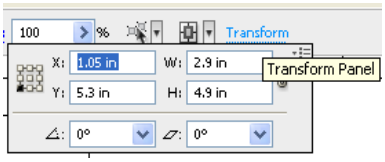


To create the target, click on rectangle tool , click on layout window, enter 0.25, 0.5 for size.

Using transform panel move lower left to 0.5,10

On the color menu select Fill and change color to black

Change out line stroke to none. The target color should look like this when you are done.



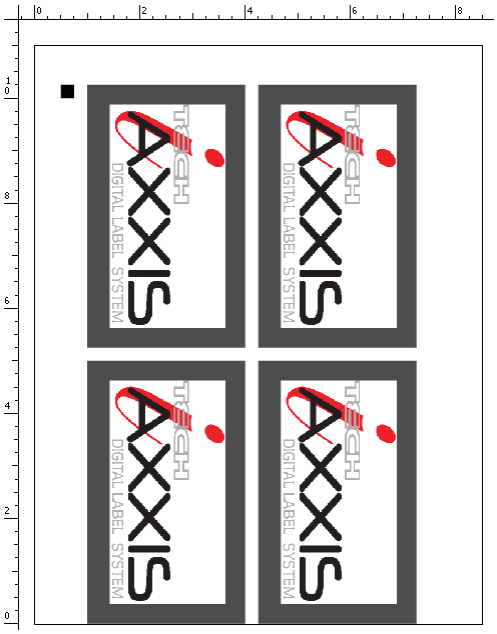

**Note: if you have a stroke on the edge of the printed target the print and cut will not line up.**

To create the bleed background, click on rectangle tool, then click on layout window. Width 3, height 5

Move lower left corner x = 1, y = 5.25

On color window, select cmyk fill to k=85 cmy=0, and no stroke on color menu

Now paste logo in foreground of label by File > Place). (I used file techsupport\sr\samples\illustratorlabel \ICON_Axxis_Cutter.bmp.) Now size and center label on grey background just created.




Select background and foreground of label. Then click on object -> group

Then click object -> transform -> move (Shift + Ctrl/M). Enter distance of 3.25 angle 0°, then click on copy button.

Select both print labels

Then repeat move the with distance 5.25 angle 270° and click on copy button.

This completes the print layer.

Next create the die lines. Click on the dielines layer on the layer window.

Create the die line for the target

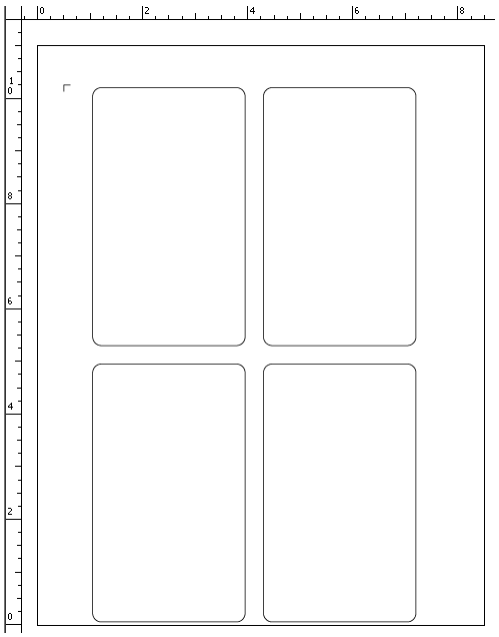
Click on line segment tool and then click on layout area

Enter length 0.125 and angle = 0°

Click on object -> transform -> rotate enter 90° and click on copy.

Using transform panel move top of vertical segment to x = 0.5, y = 10.25.

Move left of horizontal segment to x = 0.5, y = 10.25.



Click and hold on the rectangle tool then select rounded rectangle from tool menu and then click on layout window. Enter the 2.9 for width, 4.9 for height and 0.166 for corner radius. Open transform panel by going to windows > transform (Shift + F8) move object so the lower left corner is at 1.05, 5.3.

Then click object -> transform -> move (Shift + ctrl/M). Enter distance of 3.25 angle 0°, then click copy.

Select both rounded rectangles.

Then click object -> transform -> move. Enter distance 5.25 angle 270°, then click copy.

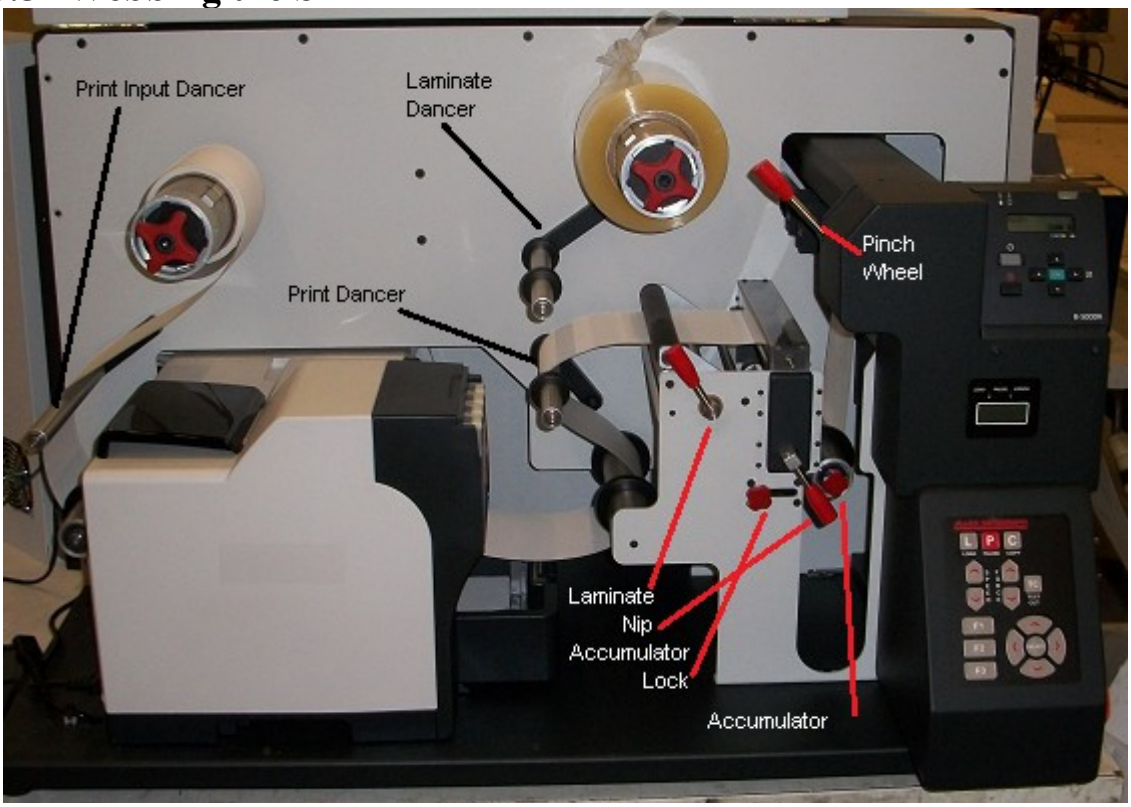
This completes die line layer

Finally you have to make the print and the cut image the same size in the up/down direction on the screen. You do this by adding either a printed line or a cut line at the bottom of the image to make the sizes of the print and cut the same size.

This completed label file is at this link Web Site Copy / CD Copy.

Use File -> save to save the file on your hard drive.

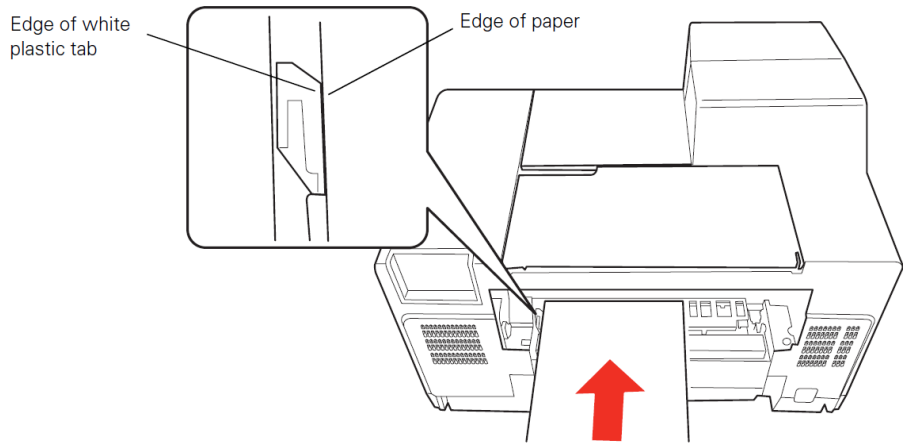
## 5.5 Webbing the SR



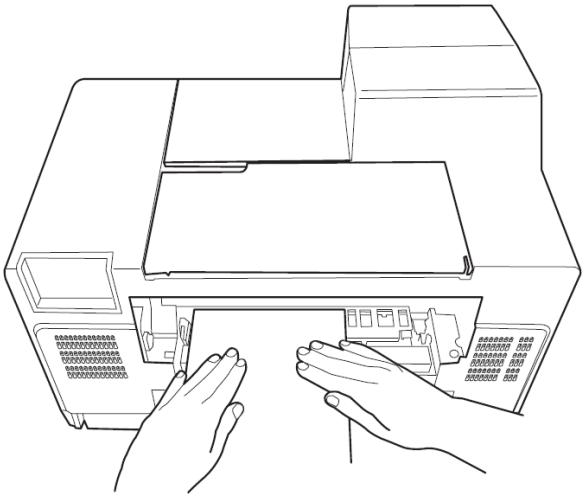

Refer also to the Epson's instruction guide ("Using the Epson B-500 with Roll Media") that was included with the B-500 roll printer, before threading the web - especially the "Loading Roll Media" section of the instruction guide

Take a roll of media with a width between 4 and 8 ½ inches and place it on the infeed mandrel of the print station, lining it up with the very back edge of the mandrel. Once the paper is lined up, lock it in place by twisting the red handle on the mandrel clockwise.

When you have fed the paper around and underneath the dancer bar, Feed the end of the roll media into the manual feed slot at the back of the printer. Looking down from above, align the left edge of the media with the white plastic tab shown below.

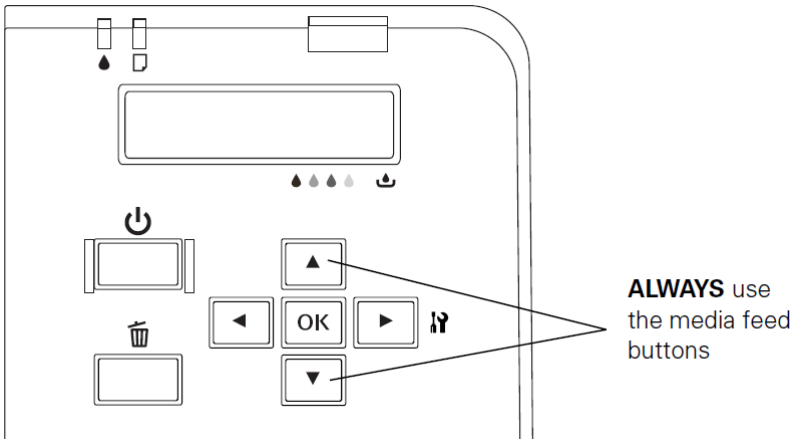



Once it is straight, guide the media into the slot until you hear the printer feed motor. Hold the media in place for 3 seconds or until the printer feeds it in.

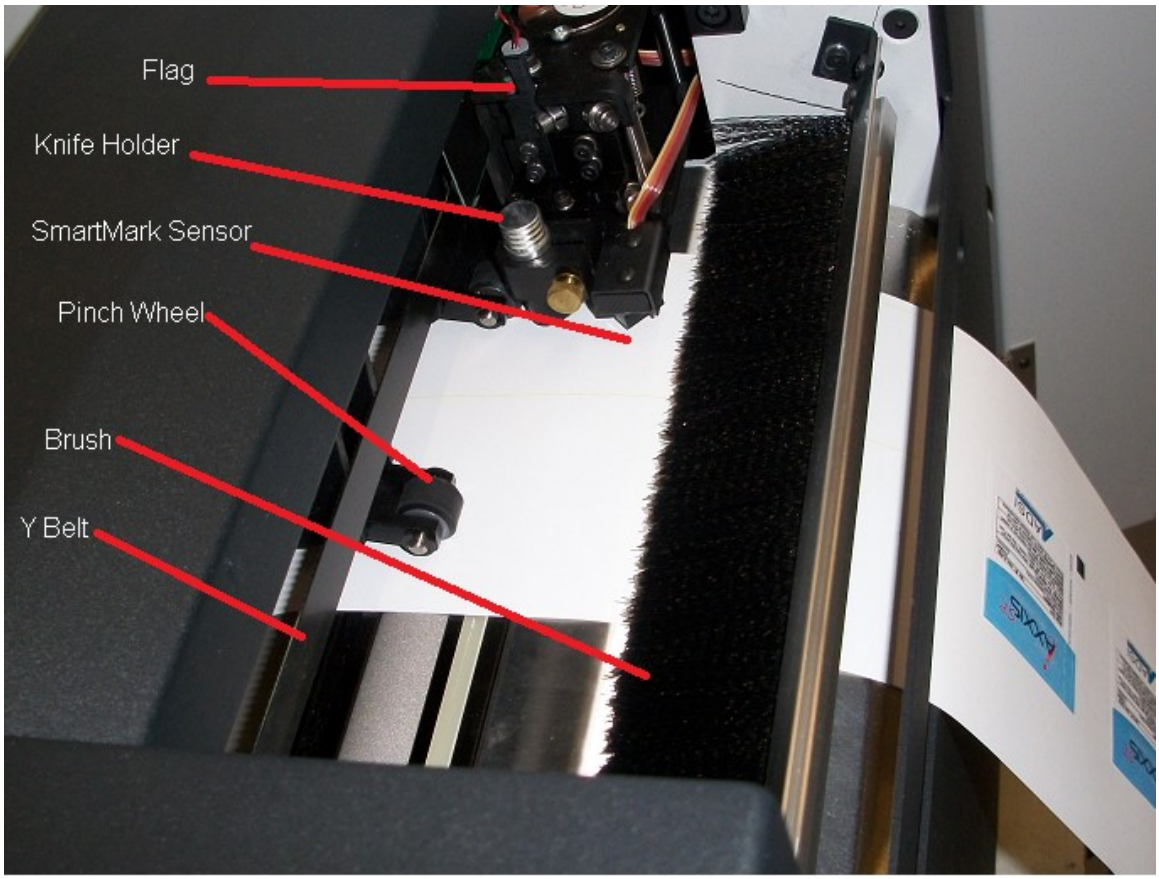



**Caution:**
Do not move the printer once roll media is loaded.

Once red into the printer you can feed the media all the way through the printer, hold down the ▼ button on the printer control panel. Continue feeding media until enough to web the machine. It will go around the guide bar then over the next dancer bar, then through the lamination roller. Attach your lamination by going around the Lamination dancer bar and in lamination roller, center and close roller. Now feed enough material to go down and up accumulator chute and out of the machine. Once, material starts feeding press F2 to take up slack. Press F2 again to stop. Now web material under accumulator then back up and through the cutting bed, under the brush, and out of the side of the machine. While holding media in place, adjust pinch wheels to be an inch from edge of media, then lock then pinch wheels down.




**{Caution: NEVER pull roll media through the printer with your hands or you may damage the printer. Always use the ▼ and ▲ buttons to feed media.}** Check to make sure the media is straight all the way through the "web" (paper path of the roll media feeding system). Adjust the media position, if necessary.




The brush is designed to just touch the media to hold it in the correct position for the SmartMark™ sensor. No pressure need be applied.

## 5.6 Printing and Cutting

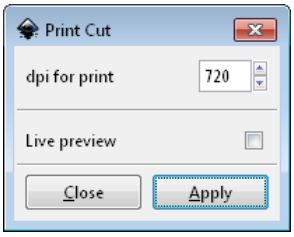
### 5.6.1 Print and Cut Interface

#### 5.6.1.1 Print and Cut from Inkscape

Open sample techsupport\sr\samples\chapstick.svg or image designed above from cd in inkscape

Use layers command and hide dielines layer

Click on Extensions > ADSI > Print and Cut




Use 720 dpi for export window then click on apply

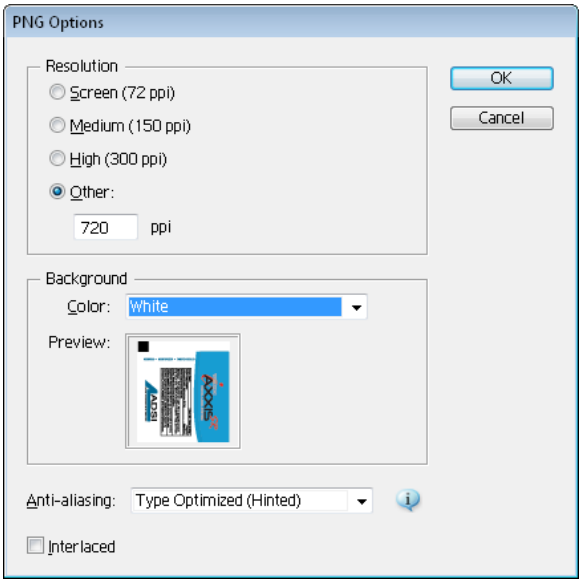
#### 5.6.1.2 Print and Cut from Illustrator

Open sample techsupport\sr\samples\chapstick.eps from cd in illustrator

Open layer menu with f7 key

Select the dielines layer

Click on File > Allen Print and Cut




Use 720 dpi and white background for export window that shows up.

### 5.6.2 Printing and Cut

From the drop down between Print & Cut and Properties select the DirectCut cutter driver installed above.

Select media width as shown in Wasatch configuration window

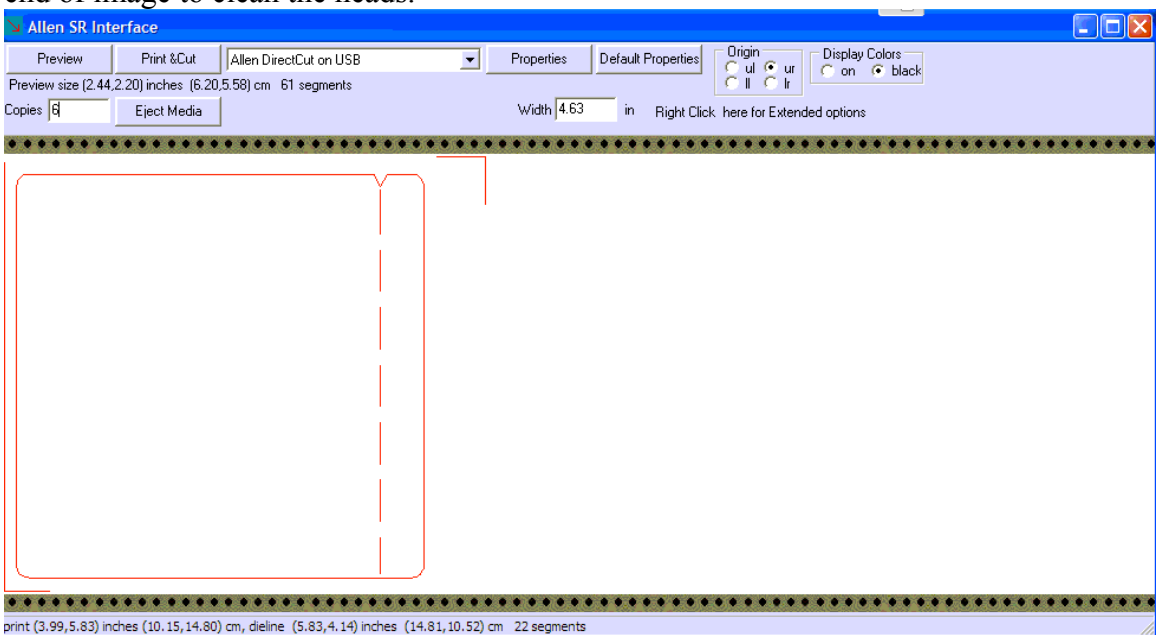
Set Copy count to number of copies you wish to print

Select origin = ur (upper right)

Click on properties and select find origin = origin only

Click on rotate and select either rotate 270° for Inkscape or 90° for illustrator. This will place the L for the target cut in the upper right corner of image.

Set space between jobs to 0.85 to 0.9 inches. The printer firmware eject this 0.9 inch at end of image to clean the heads.



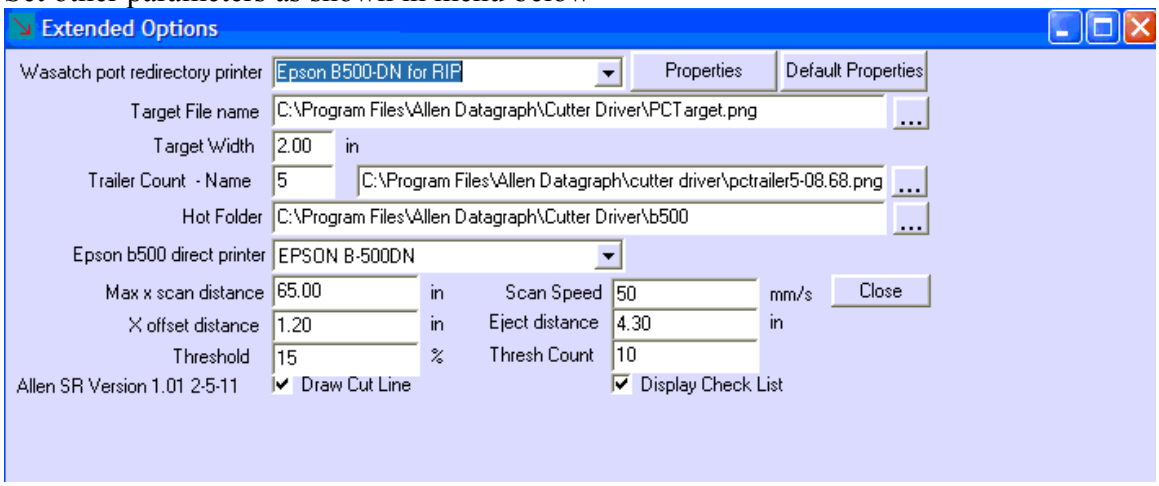

Click on Ok.

Right click on the interface and select extended options

Select the rip driver in the drop down for Wasatch port redirector printer (Epson B500 dn for rip)

Select the Epson B-500DN printer in the dropdown for the Epson b500 direct printer.

Set other parameters as shown in menu below



Click on Print and Cut.

Verify you have done all the items in the check list and click on OK.

When you have finished printing click on the Eject button in the Allen SR interface to have printer print the about 48 inches of media bring all the labels out of the machine.

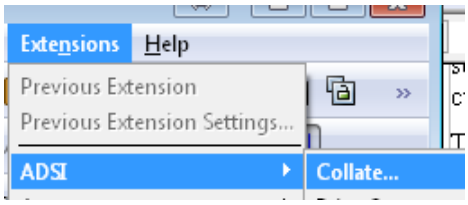
### 5.6.3 Collate

The collate interface allows creating a set of labels to be printed. Once the individual labels are designed and exported to the interface you can organize the set of labels for the machine into a label set. You can then open the interface, choose the set of labels to print, select the number of copies and media width and click on print and cut.

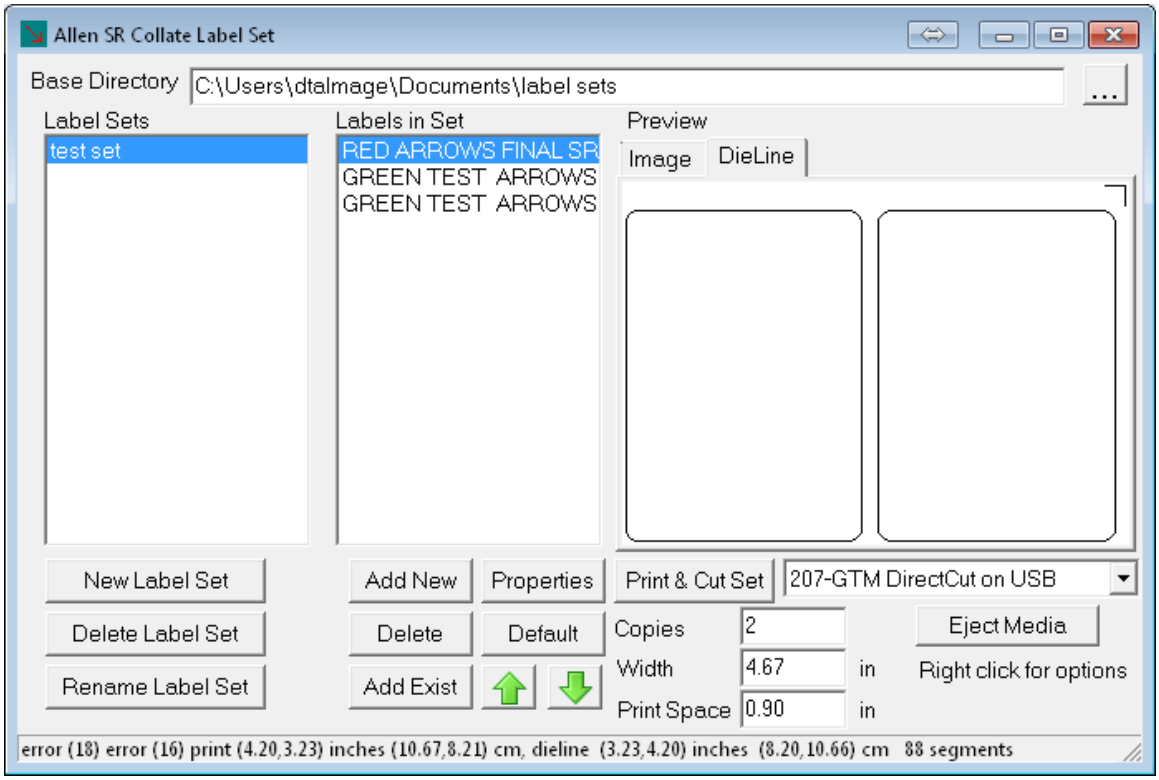
First extract the samples from the cd (techsupport\samples.zip) to your My Documents folder. This will create a "label set" directory with some samples preloaded.

If you are adding labels to a label set open the label you want to add. If you are not adding a label to a label set open any label that has a dielines layer.

The collate interface is selected by clicking on file > Allen Collate from illustrator or Extensions > ADSI > Collate from the Inkscape program.




After entering the dpi and clicking on Apply or OK, the label set interface screen will then be displayed.




The top directory will default to your My Documents folder and the sample label sets you extracted above.. If you want the saved data for you label sets to be stored in a different directory you can change it by clicking on the "..." button. The label set information and pre exported plot and graphic images are stored in this directory. You should not change the contents of this directory with except to delete a pair of files, (png/ink) or (png/ill) with same name.

To create a label set, you click on tne New Label Set button and enter its new name.

Once you have created a label set, you can add a new label to the set. Clicking on Add New will add the just exported label to the set and record the dielines and print file the the base directory. If you want to add a previously exported label to the set, click on Add Exist button and choose a previously exported label from the list. To control the order of the labels in set, click the green up/down arrow button.

If you want to add more than one new label to the set, add the first label to the set and then exit the label set interface. The interface will ask if you want to save the changes to the label sets database. You should always save your changes by clicking on Yes, unless to don't want to keep the changes you made.

To delete a label from a set, select it from the labels in set column and click Delete.

You only need to set the rotation property in the printer driver. Use 270° for Inkscape files and 90° for Illustrator files. The SmartMark cut target should appear in the upper right corner of the preview if you have set the rotation property correctly.

The print space is the space the printer automatically outputs at the end of each print. This is normally 0.85 to 0.9 inches.

The Width is the width reported by Wasatch when you click on the Max Width button.

The cutter driver appears in the drop down next to the Print and Cut Set button.

Once you have created the set and changed the number of copies you can click on Print & Cut Set to print and cut the job. You can eject all the printed material by clicking on Eject.

### 5.6.4 Variable Data

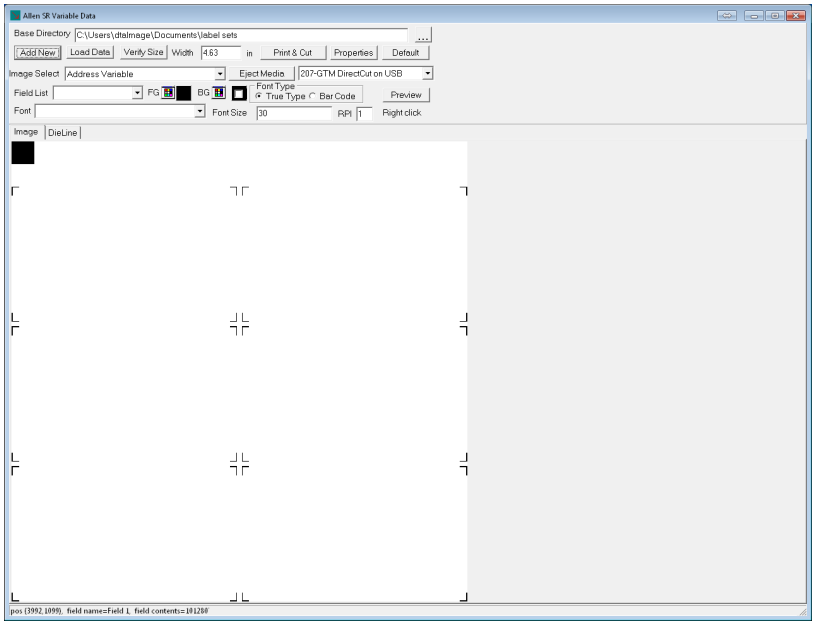
To print variable data you must create a tab delimited file using Excel program and clicking on File > Save As and change the files of type selection to tab delimited. The first line of the file must contain the field names. If you have the file in a database you can use Microsoft Excels get external data function to get the data out of the database.

So the data file should look something like this before you save it.

| Name | Address | City State |
|---|---|---|
| John Right | 39448 E Hampton | Aurora, CO 89923 |
| Mary Wrong | 3944 S Hudson | Atlanta, GA 39932 |
| Allen Datagraph | 56 Kendall Pond Rd | Derry, NH 03038 |

Once you have created the tab delimited file, create a label where you want the data from the data file inserted. The file must contain at a minimum the printed and cut target and some indication on the print as to where you want to put the data from the file.

Once the label file is created use Illustrator File > Allen Variable or Inkscape > Extensions > ADSI > Variable Data. Select 720 DPI for export as you have for other print and cut methods. The Variable Data user Interface is then displayed.

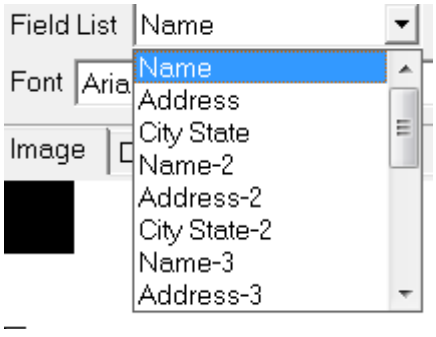


To use the just exported image click on Add New. To use a previously exported image select it from the image select drop down. The sample image opened in Inkscape was techsupport\sr\samples\address Variable.svg.

Next load the data by clicking on Load Data.

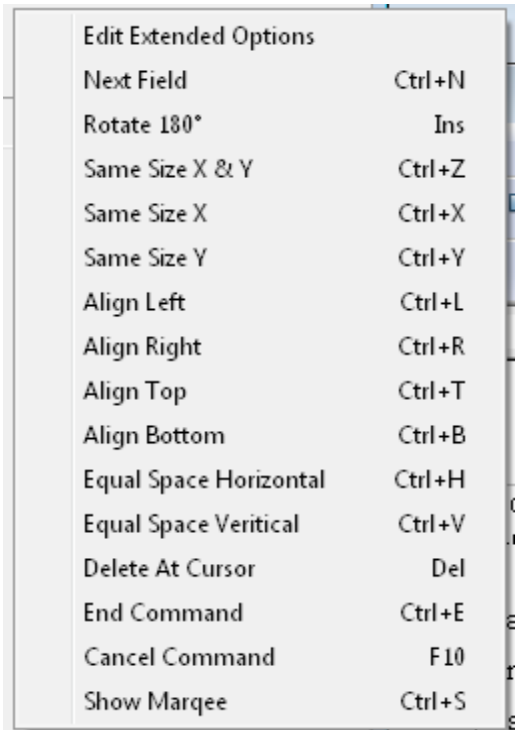
Since we have made room for 6 records in the image set RPI (Records per image = 6). If you design with a different number of records per image enter the number of records used by the image.

In the Field List you will have 6 copies of each field




The Field without a dash "–" is the first record, the -2 is 2nd record, -3 is third, and so on.

There is an extensive drop down menu when you right click as well as predefined hot keys. These functions are described below:




Next Field shows the image with next set of 6 records from the loaded data.

**Using Multiple Field Command**

Select the command you want by right clicking on the screen or entering the hot key from the keyboard. Then select one or more marqees you have already drawn. Then select End Command or CTRL/E character from the keyboard.

Rotate 180° rotates the insert in the marquee. You don't need other rotation as you can draw the marquee field taller than wide or wider than tall to select other rotations.

Same Size x & y allows making a set of marquees all the same size as the first selected.

Same Size x allows making the marquees selected the same width as the first marquee selected.

Same Size y allows making the marquees selected the same height as the first marquee selected.

Align (left,right,top,bottom) allows making the left, right, top or bottom location of the selected marquees the same as the first selected.

Equal Space Horizontal, Vertical makes the space between the marquees the same as the first two marquees selected.

Delete At Cursor deletes the marquees selected.

End Command ends one of the above command.

**Other Commands and drawing, moving, and resizing marquee's**

Show Marquees allows displaying or hiding the marquess defined.

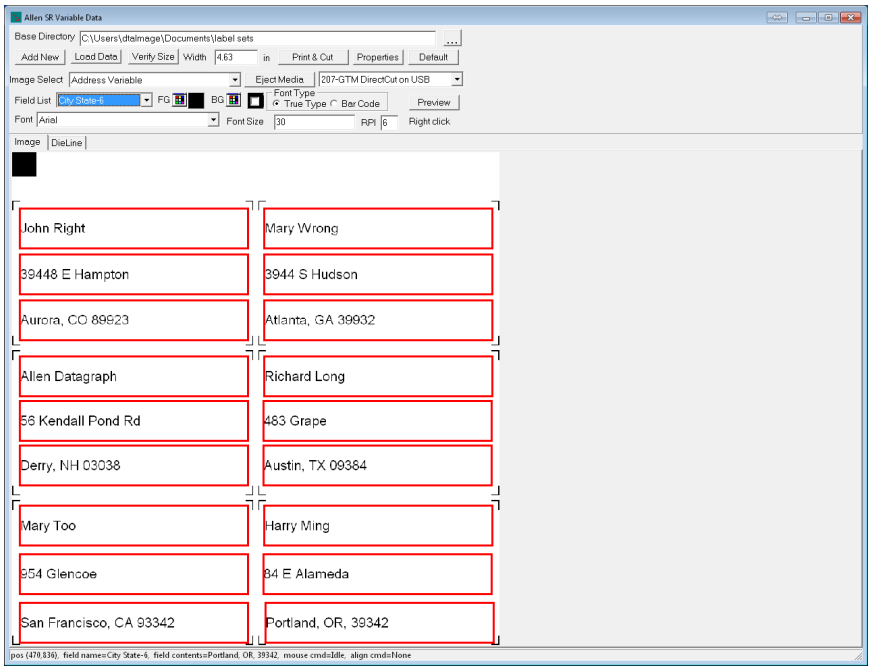
To create a new marquee, select the field you want to draw the marquee for from the field list and drag a rectangle on the image where you want it to appear..

To move a marquee, move the mouse to a corner and drag it to where you want it.

To expand or shrink a marquee move mouse to center of line you want to move and drag it where you want it.

To draw vertically make the marquee taller than wide.

In our example, after drawing the 18 marquees for the Name, Address, City State variable image and aligning them we can see a preview like this.



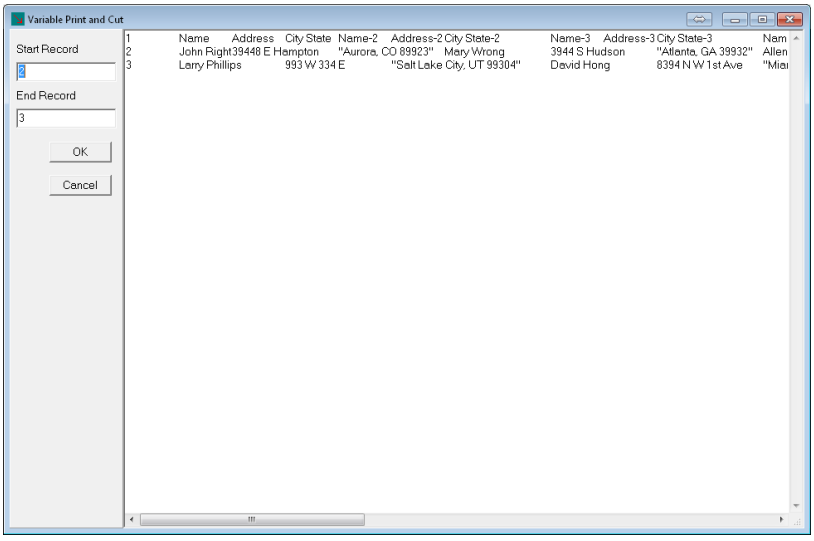

You can click on Verify Size to verify that all data will fit in each marquee.

Click on Dieline tab, then click on Properties and set Rotate printer property so target L is cut in upper right of screen.

Set width of media by entering it in the Width box to same as displayed in Wasatch after clicking on the Set Max Width.

Set space between jobs to 0.85 to 0.9.

Click on Print and Cut

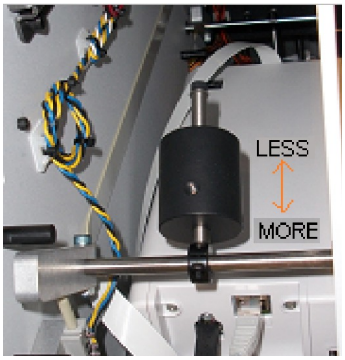

Variable Print and Cut
Start Record
2
End Record
3
OK
Cancel
1 Name Address City State Name-2 Address-2 City State-2 Name-3 Address-3 City State-3 Nam
2 John Right 39448 E Hampton "Aurora, CO 89923" Mary Wrong 3944 S Hudson "Atlanta, GA 39932" Allen
3 Larry Phillips 993 W 334 E "Salt Lake City, UT 99304" David Hong 8394 N W 1st Ave "Mia

Select which record you want to print and click on OK

## 5.7 Axxis Web Tension Controls

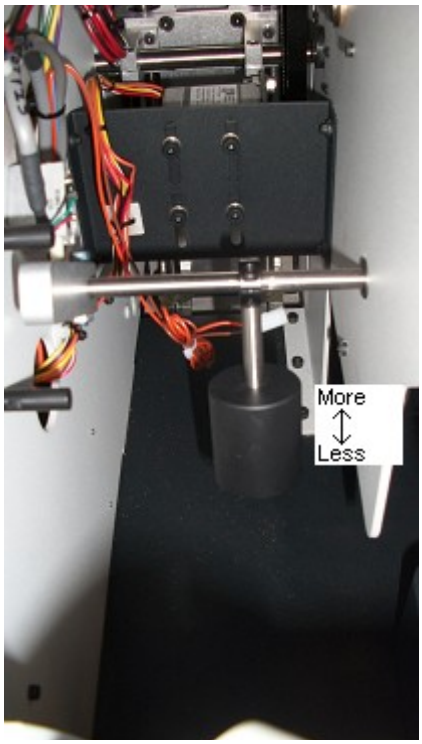
### 5.7.1 Printer Input Dancer

Remove 8 screws as shown




Remove the 8 screws indicated. Adjust counter balance weight to set the tension. Set for more tension if motor does not turn off. Set for less tension if print size is not to scale too small.

### 5.7.2 Print Dancer Tension




To adjust tension of print dancer reach hand into machine just in front of printer, Loosen set screw. Adjust position of counter weight on arm as shown in photo. If you have stretching of printed image you need less tension, if print dancer does not pull media to full position you need more tension.

### 5.7.3 Laminate Tension

The tension setting on the back of the Sr allows controlling the tension on the laminate.. You should use more tension on wider materials and less tension on narrower materials. If you are seeing drift left and right, or laminate is not laying down smoothly, you probably need more tension. If the laminate stretching you should use less tension.

You might need more tension on the print dancer if you have more tension on the laminate dancer.

## 5.8 I-Tech Axxis SR Remote Panel and LCD Panel

The Axxis has a 4 digit display and a 16 button panel. The display is used to interact with the operator showing current status. If the menu is not active the first digit is C for cut, 2nd digit is speed (0 = 0-4%, 1= 5-14%, 2= 15-24% ...), and last 2 digits are force.

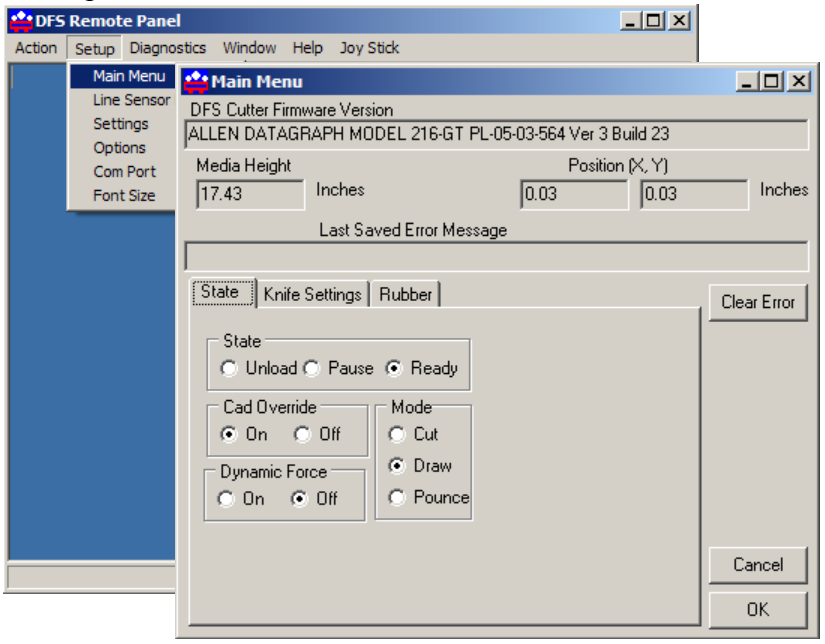
### 5.8.1 i-TECH Print Cut remote panel

The remote panel is installed earilier. It appears as an icon on your desktop and in the start menu at Start -> All Programs -> Allen Datagraph. Double click on the icon on the desktop to start the remote panel.

### 5.8.2 Action Menu

#### 5.8.2.1 Save / Restore Calibration

This command saves line sensor parameters that depend on the calibration and calibration of the Axxis or allows loading the calibration parameters from a file. It also allows backing up your settings to your hard drive in case of inadvertent operator changes to settings.




#### 5.8.2.2 Load / Save Settings from Cutter to File,

These commands save the settings (see setup settings menu) and some line sensor parameters that are in the Axxis to a disk file or loads settings saved by this command from a file and sends them to the Axxis. This allows you to have more than 6 setups for different materials. It also allows backing up your settings to your hard drive in case of inadvertent operator changes to settings.

### 5.8.3 Setup > Main Menu

The Main menu opens the main menu window. The top window shows the model number and firmware version (build 23 in the sample). The media height window shows the maximum dimension the y axis is set to cut. The AXXIS will send this dimension (called the clip limits) to the software program so that the software program can determine if the specified cut file will fit. If a file with dimensions larger than the clip limit is sent to the AXXIS, the cut will be truncated. The position window shows the current location of the knife in the AXXIS coordinate system. The Last Saved Error Message window displays the last error. Errors displayed here may be old. The error may have occurred earlier in the AXXISs life. The Clear Error button clears the memory of the saved error notification. Some features are advanced and only appear if menus = advances is selected in setup → options.

### 5.8.3.1 State Tab

The **State** radio buttons allow the user to set the condition of the AXXIS. **Unload** means the AXXIS is not loaded and is not ready to receive a cut file. The **Pause** radio button means the AXXIS is currently paused and the **Ready** button means the AXXIS is loaded and ready to receive the cut file and proceed with cutting. This set of buttons duplicates the Load and Pause buttons on the front panel.

The **Cad Override** radio buttons enables or disables the CAD override function. With the function **On,** the AXXIS will ignore some of the HPGL control commands sent from the cutting software. With the function **Off,** the software can control these HPGL functions. Some CAD systems will work correctly only when this feature is set to on.

These commands include:

| | |
|---|---|
| AS | set acceleration |
| FS | set force |
| KA | set minimum angle |
| KN | set knife offset |
| IP | input P1/P2 |
| RO | rotate |
| SC | set scale |
| SP | select pen |
| ST | select tool |
| UV | up velocity (move speed) |
| VS | down velocity (cut speed) |

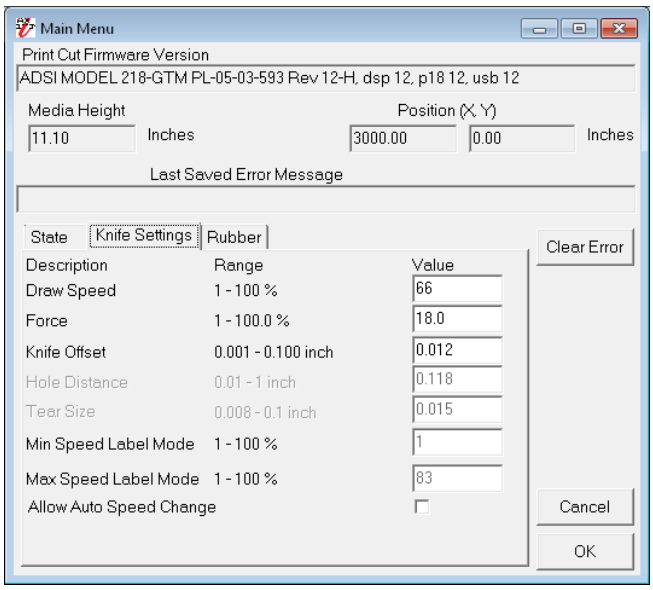
**The Mode** radio button sets the operation. Select cutting, pen plotting/drawing or pouncing. The AXXIS will normally only use the Cut function.

**The Dynamic Force** radio buttons (an advanced option) engages the dynamic force function, which instantaneously adjusts the force on the fly based on the actual velocity of the knife blade. All AXXISs must accelerate and decelerate as they cut around corners. Some medias require different force settings for different speeds. This parameter allows for building a database for these materials and when enabled will greatly improve the cutting on these materials. (See the Setup → Dynamic Force for more details).

### 5.8.3.2 Knife Settings Tab

**Draw Speed** displays and sets the velocity of the knife when it is actually drawing or cutting. The draw speed is the speed the knife travels around the periphery of the items being cut.

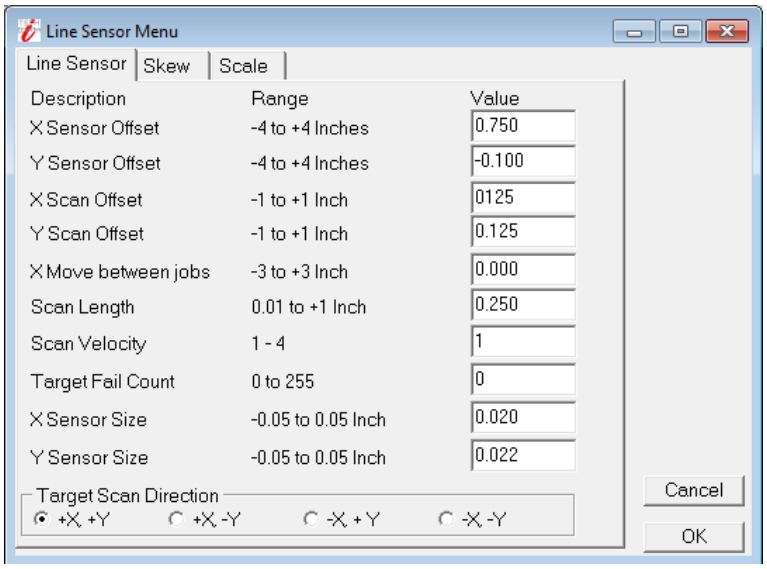
**Force** displays and sets the cutting force. The range of force is 1 to 100% represent 10 to 550 grams of force.



**Knife Offset** is the distance between the center of the knife blade and the knife tip. Allen Datagraph blades have a 0.012 inch (.030 cm) offset. If you have objects that do not close correctly, you might have to adjust the knife offset to correct the problem.

#### 5.8.3.3 Rubber Tab

This tab is not used on the AXXIS unless you are doing stencil cutting at high force values.



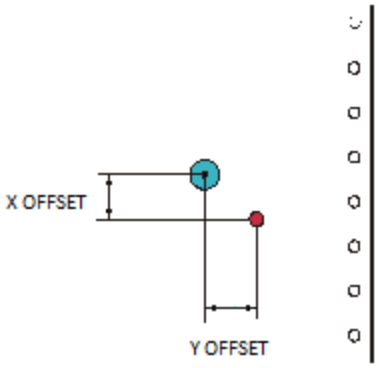

**Rubber Minimum Angle** displays and sets the angle between consecutive vectors that when exceeded will invoke the tangential emulation mode. At angles less than the value set in this parameter the AXXIS will move between vectors without evoking the tangential emulation mode.

**Stencil Force** is the force separation between drag knife mode and tangential emulation cut mode. Tangential emulation cut mode is normally used for rubber or very heavy material. The AXXIS will normally not cut this type of material so this value should be set to a high force %.

### 5.8.4 Setup > Line Sensor

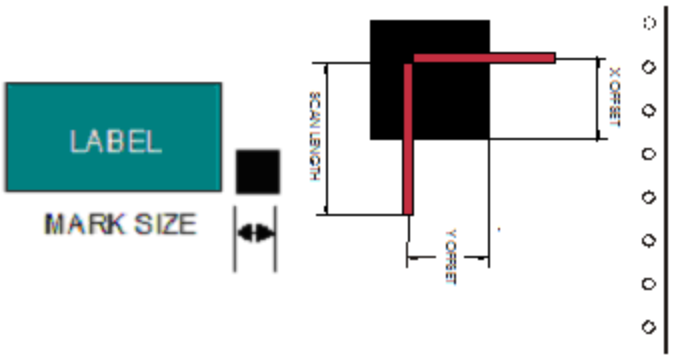
Clicking on Setup Line Sensor menu opens the SmartMark™ Menu.

#### 5.8.4.1 Line Sensor Tab




**Sensor Offsets** - The SmartMark™ sensor is offset from the center of the knife to the center of the sensor. The sensor offset distance is preset at the factory or during installation, but may need to be adjusted on occasion. The AXXIS can automatically calculate and set the SmartMark™ offset and sensor size parameters. See drawing for definition of sensor offsets. See TSB Title Calibration Web Site Copy / CD Copy

**X/Y Sensor size** is the offset from the exact center of the red dot of the SmartMark™ sensor to the sense radius and may change based on sensor sensitivity or media reflectivity. This parameter is best set using the procedure in the TSB above. The Sensor Size parameter is only useful in origin scale and three target scanning. If you are not using



these methods you can set the size to 0.02. The sensor size is included in the sensor-offset parameter.

Scanning Parameters

The AXXIS SmartMark™ system has adjustable scanning parameters to allow for different size and style of registration marks. The primary parameters are the scan offset and length. The ideal X and Y offsets are one-half the mark size and the ideal scan length is two times the scan offset.

To set the parameters type in the desired numbers in the **X Scan Offset, Y Scan Offset** and **Scan Length**. When you have entered the desired values click on **OK.** (see also section 5.2 Explanation of SmartMarkTM). The scan length should = the mark size.

**x/y Scan Offsets** This is the distance to move in x and y to perform the scan. It should be 1/2 the scan length. The signs of scan offset for origin target should be +X/+Y.

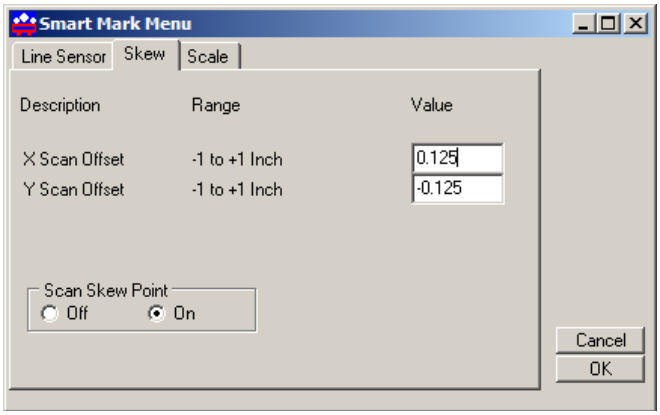
**Scan Velocity** (default 2) sets the speed of the scanning. Depending on the media and registration mark contrast, this parameter may need to be adjusted. The better the contrast in reflectivity the faster the scan velocity can be set. If you are experiencing missed registration marks, you may need to reduce the scan velocity.

**X move between jobs** is the distance after the farthest excursion of the x-axis during a frame that the AXXIS should advance to find the target in the next frame of labels. This item is duplicated in the DirectCut printer driver as the space between jobs. These two parameters are added together so set this value to 0.

**Target Scan Direction** sets the direction of the scanning operation. For single mark origin scanning the default target scan direction is **+X, +Y**. There may be circumstances where it might be desirable to reverse the scan direction. For instance, the mark might be printed to close to the trailing edge of the preceding labels limiting the distance available for scanning. In this instance, it might be desirable to reverse the scan direction in this axis. Consideration must be given in the cut file because the inside edge of the mark will be considered as the 0,0 point for the AXXIS coordinate system. This is an advanced menu option and must be enabled on the setup > options page. See also Web Site Copy / CD Copy.

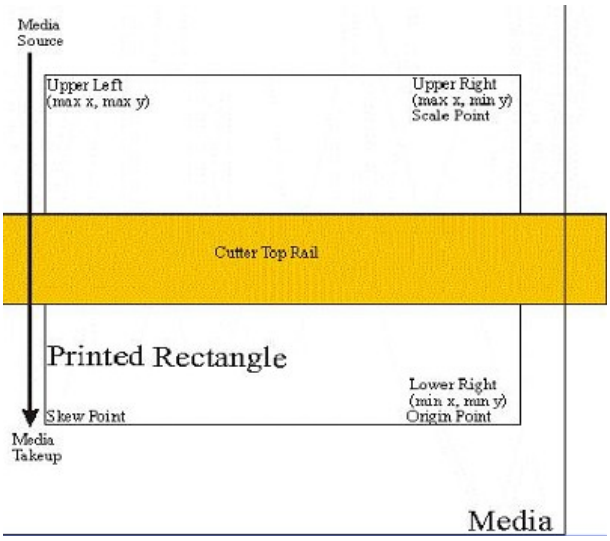
#### 5.8.4.1.1 Skew Tab

The SmartMark™ system can use one, two or three registration marks. In standard operation the AXXIS only requires one registration mark to accurately cut the die lines of most labels. If, however, there is a problem with the printing it may become desirable to use multiple registration marks.



When using two registration marks the embedded computer in the AXXIS will automatically scan both the Origin Point and the Skew Point. This is helpful if the printing is skewed in relationship to the media.

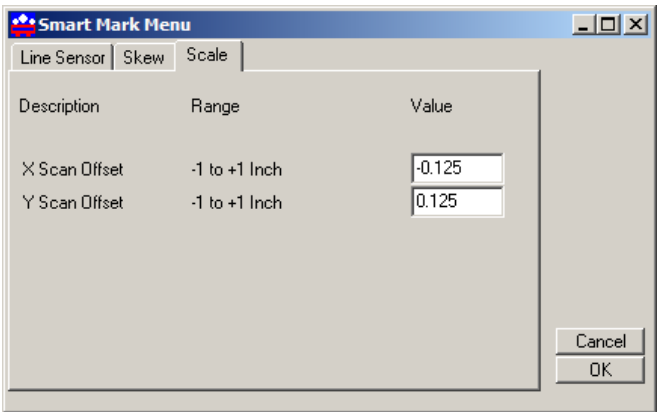
When using multiple registration points it is helpful to understand the FO command and its parameters.




**X, Y Scan offset**. This is the distance from the skew point to perform the Y and X scans to find the skew point. With the targets defined as above, the +X, -Y is the correct signs for the scan offset for the skew mark.

**Scan Skew Point** - A fourth scanning mode is implemented that performs scaling and skewing by scanning only two marks (origin and scale). This method assumes there is no scaling error in the Y-axis. (Specify the Origin, Skew, and Scale mode in your artwork software). By selecting the scan skew mark off, the AXXIS will only scan the Scale and Skew mark and perform X-axis scaling and skew correction. This parameter should always be on unless your printer driver does not support origin scale processing.

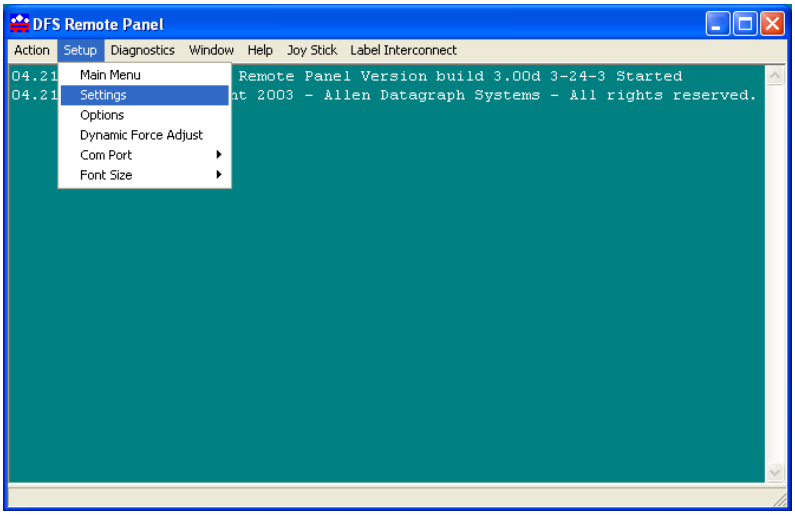
**Target Scan Direction** sets the direction of the scanning operation. The skew mark is normally scanned **+X,-Y**. See Web Site Copy / CD Copy.




#### 5.8.4.1.2 Scale Tab

**X, Y Scan Offset**. This is the distance from the scale point to perform the Y and X scans to find the scale point. With the targets defined as above, the -X, +Y are the correct signs of scan offset for the scale target.

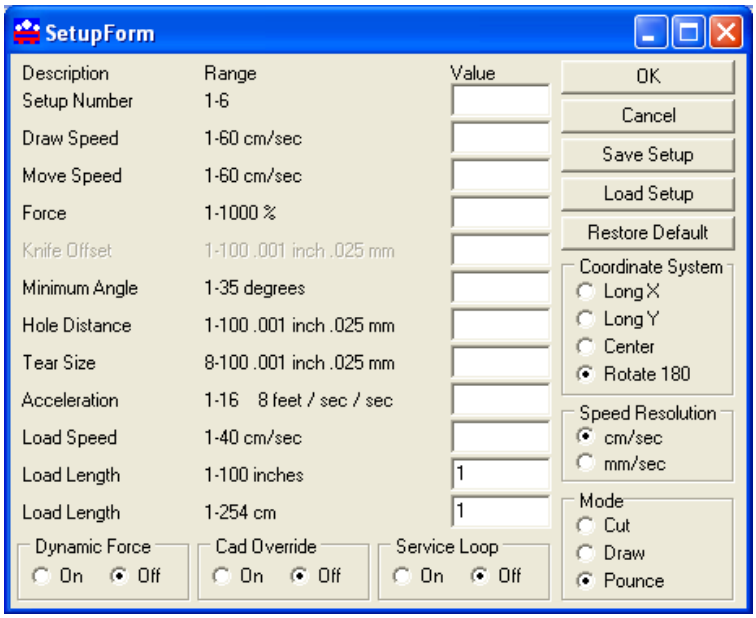
**Target Scan Direction** sets the direction of the scanning operation. The scale mark is normally scanned **-X,+Y**. There may be circumstances where it might be desirable to reverse the scan direction. See Web Site Copy / CD Copy.



### 5.8.5 Setup -> Settings Menu

The AXXIS allows six factory or custom set-ups.

Set-Up 1, whether standard or modified, is automatically loaded at power up. A user may modify the speed, force, (or any feature) on the control panel. See key command summary. Changes to a Set-Up, *unless saved*, will be in effect only until changed from the control panel, CAS software, the unit is turned off or reloaded.




Any of the features shown in the Setup Form may be saved to one of the systems 6 memory locations.

To save a custom set-up simply fill in the desired value(s) in the appropriate window, including the Setup Number, click on the **Save Setup** button. Some features are advanced and only appear if menus = advances is selected in setup → options.

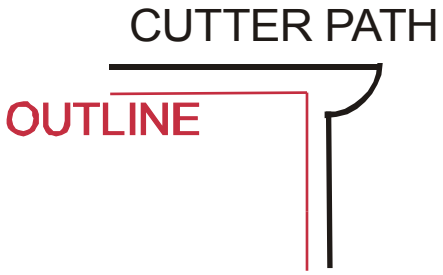
To load the edit boxes with the current system parameters, input the setup number in the **Setup Number** window and then click the **Load Setup** button.

**Setup Number** sets the memory position.

**Draw Speed** is the velocity of the knife when cutting (e.g. while the knife is down).

**Move Speed** is the velocity of the knife when in the up position (not cutting).

**Force** controls the down force or pressure on the knife.




**Knife Offset** All drag knife cutters use a knife blade with the tip offset from the center of rotation. As the AXXIS moves the knife trails behind it, just like a caster on an office chair. In order to accurately cut the outlines, the computer embedded in the AXXIS compensates for the offset of the knife. This parameter sets the offset for those calculations. The figure to the right shows the path the knife follows; the radius move at the corner allows for the knife offset. There are three blades available from our online store our online store at http://www.allendatagraph.com.

H20-017 30° Allen Datagraph i-TECH, DFS, Centra, Axxis cutting blade. Ideal for label stock. Angle of blade at 30 degrees to have exact control on depth of cut. This blade has a 0.012 inch (0.0305 cm) offset. It can be identified by its blue plastic cap.

H20-007 45° Allen Datagraph i-TECH, DFS, Centra, Axxis cutting blade. Ideal for general purpose cutting of vinyl and other thin materials. Angle of blade at 45 degrees to balance depth of cutting and pivot angle. This blade has a 0.012 inch (0.0305 cm) offset. It can be identified by its red plastic cap.

H20-008 60° Allen Datagraph i-TECH, DFS, Centra, Axxis cutting blade. Ideal for cutting thick materials. Angle of blade at 60 degrees to optimize cut angle. This blade has a 0.012 inch (0.0305 cm) offset. It can be identified by its green plastic cap.

Minimum Angle The AXXIS must stop and then accelerate whenever it makes a sharp turn. At shallow angles the AXXIS can continue at the cut velocity without decelerating then accelerating. This parameter sets the angle where below which the AXXIS can continue without stopping. High values increase throughput and lower value increase quality. Good quality can be obtained at reasonable speed at the default value of 12°.

Hole Distance displays and sets the distance between holes when the AXXIS is used in the pounce mode.

Tear Size displays and sets the hole size created when the AXXIS is in the pounce mode.

Acceleration displays and sets the servo acceleration. The unit of measurement is 1/4 G's or 8 feet per second per second. This parameter is more important in small graphics than in large labels or text. A setting of 2 to 8 is generally the best for most label cutting. This parameter does affect throughput speed on graphics with short vectors. As the graphics get larger the effect of higher acceleration diminishes. Higher acceleration can degrade cut quality. Use smaller acceleration numbers for heavy materials.

Load Speed displays and sets the speed of the material loading and the speed of the material pull off in the service loop mode.

Load Length displays and sets the length of the material that is pulled during the load cycle and service loop if the AXXIS service loop mode is on.

**Service Loop** This should be turned off on the AXXIS when the AXXIS is in the Label Mode.

Cad Override On or OFF enables or disables the CAD function. With the function On **(disabled),** the AXXIS will ignore some of the HPGL control commands sent from the cutting software. With the function Off, the software can control these HPGL functions.

These commands include:

| | |
|---|---|
| AS | set acceleration |
| FS | set force |
| KA | set minimum angle |
| KN | set knife offset |
| IP | input P1/P2 |
| RO | rotate |
| SC | set scale |
| SP | select pen |
| ST | select tool |

UV up velocity (move speed)
VS down velocity (cut speed)

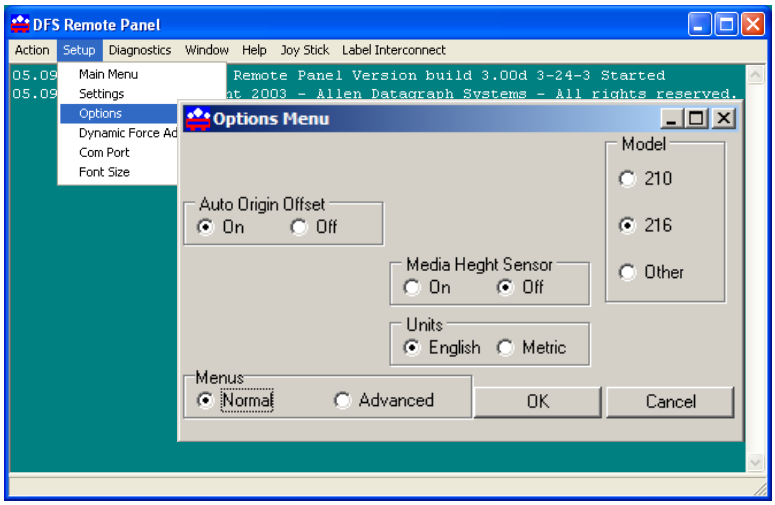
**Mode** sets the operation mode. Select the operation mode cutting, pen plotting/drawing or pouncing.

To restore the factory default to all setups click the **Restore Default** button.

To load a setting enter setting number desired and click on **Load Setup.**

To save a setting enter setting number desired and click on **Save Setup**.

### 5.8.6 Setup -> Options Menu




The options menu displays and sets the following parameters:

**Auto Origin Offset** determines whether moving the joystick automatically sets the origin to (0,0). Most CAD systems and the Allen DirectCut printer driver require this option to be set On. Set to Off when cutting from a CAD system that does not use the **SmartMark™** sensor such as the Gerber Omega software.

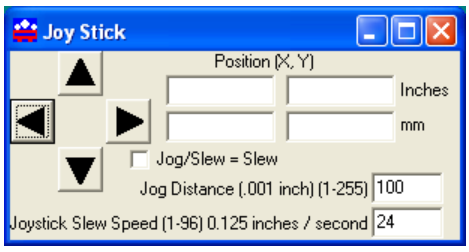
**Language** determines which language the AXXIS uses. Select HPGL for most cad systems and the Allen Printer Driver. If you are using Gerber Omega select Gerber. If your cad system only outputs dmpl you can select this language.

**Menus** option offers the more advanced features of the software. It is recommended this be set to Normal until a more advance feature is understood or is required by your operation. The menu items below are displayed when the menus is set to Advanced

**Units** sets the units of measure to English or Metric units.

**Model** sets the model number. Password for model number change is 23. Do not change the model number unless you know what you are doing. The model number for the SR is 218.

### 5.8.7 Joystick




**JOYSTICK** The joystick is used for positioning the knife and media in the die cutting station.

The four **ARROW KEYS** are used to jog the material or AXXIS carriage that holds the knife blade and the SmartMark™ sensor. With the Jog/Slew box unchecked so that Jog/Slew = Slew, the joystick speed will be the speed set in the Joystick Speed Window. Left Click and hold the arrow button to move the material or

carriage. With the Jog/Slew box checked so that Jog/Slew = Jog, the arrow buttons will jog the AXXIS that fixed distance each time the button is clicked.

The setting in the Jog Distance Window also sets the jog distance for the Front Panel Joystick buttons.

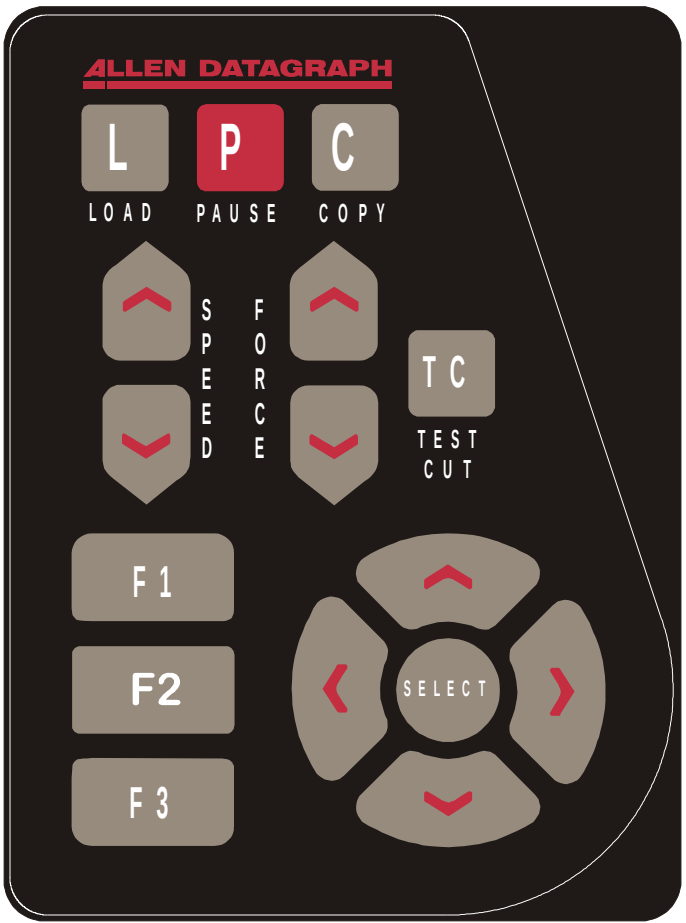
### 5.8.8 Front panel of i-TECH AXXIS Finisher

The front control panel is the primary user interface for the AXXIS. It is used for input of speed and force as well as several other functions.

**LOAD** The load key is used to initialize the system and to load or automatically fill the supply accumulator. Once the material is fed thru the media path and the nip rollers are engaged (see section Error: Reference source not found Error: Reference source not found), press the load key and the supply roller will start feeding media into the supply dancer bar and will automatically stop once the supply dancer bar reaches the bottom and the input accumulator is full. The load light will then come on to indicate the system is ready to operate. Be sure that the label frame you want to cut is at least 2 inches behind the llade before pressing load.

**PAUSE** The pause key will halt the operation of the system at any point. It is used to pause the system for inspection, media jams or to pause the machine for any other reason. Press the pause key to resume the system. The system can be jogged while paused and will remember where it was and resume from where it was stopped regardless of where it was jogged. This is very helpful for inspecting the cut. You can pause the system and joystick the media or cut head away from its position to inspect the cutting or registration. After inspecting the media, simply press the pause key again and the AXXIS will return to the point where it was paused and resume cutting. The pause light will flash while the system is paused. You can also use the pause button to enter the unload state (press Pause followed by Load).

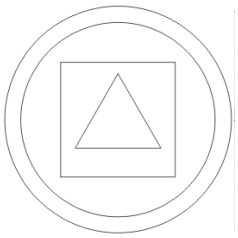
**COPY** The copy key is used to input the quantity of copies the AXXIS will digitally die cut. It is used after the first copy of the job is cut. Once the first copy is cut and you are happy with the results, press the copy key. The display will read `0001.` The number represents the total number of copies including the first one run. Increase the number of copies by pressing the up arrow key of the joystick or the force up button. Hold the key down and the numbers will start moving slowing then more quickly. Press the down arrow key to lower the number. Alternatively the force keys will increment the single digits and the



speed keys will increment the 10's digits. If you enter 0 the copy will stop at end of next job. If you enter -001 then it will count up forever. Remember the number displayed includes the first copy run before the copy key was pressed. Input the copy quantity and start the cutting by pressing the **SELECT KEY**.

**SPEED** The speed keys are used for controlling the cut speed (the speed the knife travels around the periphery of the items being cut). Increase the speed by pressing the up arrow key. Decrease the speed by pressing the down arrow key. Hold the key down and the numbers will start moving slowing then more quickly.

**FORCE** The force key is used in conjunction with the test cut key to set the depth of cut. The range of force is 1 to 100% when the system is in the normal force range. For most applications the normal force range is adequate. In the normal force range mode, the force is adjustable between 10 and 550 grams of force in 100 steps.



The force is set by test cutting the media to be cut using the test cut function. Using the joystick, position the knife in an unused portion of the media and press the **TEST CUT** key. The system will cut a test cut pattern similar to the diagram to the right. With a sharp knife or tweezers you should be able to individually remove each part of the test cut pattern working from the ring to the triangle without affecting the remaining parts. A properly set force will leave a very slight scratch or mark on the liner.

The force may need to be adjusted due to blade wear during use if problems with weeding occur. Simply increase the force setting by one until satisfactory weeding occurs. If the knife blade is changed, revert back to the original setting or perform the test cut procedure again. The blade may need to be replaced if the force is increased by more than 20 percent from when the blade was new.

**F1** This key puts the pen up or down during digitizing mode.

**F2** This key turns on/off the supply nip roller

**F3** This key turns on/off the take up nip roller

**RESET** the AXXIS by pressing the F1, F2 and F3 keys in order.

**JOYSTICK** The joystick is used for positioning the knife and media in the die cutting station and for several other functions.

The four **ARROW KEYS** are used to jog the material or AXXIS carriage that holds the knife blade and the SmartMark™ sensor. Press the key once to move the material or carriage slowly and press it a second time within ½ second to move at a faster speed. Tap the key to jog the AXXIS a fixed distance. The distance is adjustable (see Joy section below or joystick in the Remote Panel section).

**SELECT** The select key is used to invoke the menu system. Press the select key and the display will change to indicate the last used menu item. To select a menu item press the select key and then press the right or left arrow key to scroll thru the various menu items. With the desired menu item displayed, press the up or down arrow key to select the state. When the desired state is displayed press the select key to input the menu item and state. The menu items are: ACCL, CAd, diA, FILL, indE, JOY, OPEr, and Set.

**Menu Items:**

**ACCL** allows setting the acceleration in ¼ G increments. Acceleration is the rate of increase/decrease of speed of the motors along a vector. Higher G values increase throughput however higher G values also increase the likelihood of experiencing repeatability problems. Recommended values are (2-8) for standard labels.

**CAd** override menu function enables or disables the CAD override function. This is an advance function and is only necessary when using cad systems that are not designed for the AXXIS. With the function On the AXXIS will ignore some HPGL control commands sent from the cutting software. With the function Off the CAD software can control these HPGL commands.

The commands affected by CAd override are:

| | |
|---|---|
| AS | set acceleration |
| FS | set force |
| KA | set minimum angle |
| KN | set knife offset |
| IP | input P1/P2 |
| RO | rotate |
| SC | set scale |
| SP | select pen |
| ST | select tool |
| UV | up velocity (move speed) |
| VS | down velocity (cut speed) |

Press the select key to initiate the menu function. Press the left or right arrow key to display CAd, then press the up or down key to toggle between off and on. Press the select key to lock in the desired menu setting.

**diA** is used for entering into the diagnostic mode. Press the select key to initiate the menu function, then press the left or right arrow key to display diA. Press the up or down key to scroll thru the diagnostic numbers (0002 – 0099). Press the select key to start the diagnostic. (see diagnostics section) . To exit from a diagnostic mode select 0099 and press select.

**FILL** is used to add more material to the supply accumulator loop at any time during the operation of the AXXIS. Press the select key to initiate the menu function, then press the left or right arrow key to display FILL. Press the select key and the AXXIS station will pause and the supply nip roller drive will start to fill the supply dancer bar loop. Once complete the supply nip roller drive will automatically stop and the AXXIS will resume. This is useful if for some reason either of the dancer bar loops have insufficient material.

**IndE** indexes the x-axis. One of the uses for this function is for metering material. Press the select key to initiate the menu function, then press the left or right arrow key to display `IndE.` Press the select key. Press the up or down arrow to toggle between inches (`InCH`) or centimeters (`cEnt`). When the desired unit of measure is displayed press the select key. The display will read `0001.` The number represents the number of inches or centimeters to be metered in the x-axis. Increase the number by pressing the up arrow key of the joystick. Hold the key down and the numbers will start moving slowing then more quickly. Press the down arrow key to lower the number. Alternatively the force keys will increment the single digits and the speed keys will increment the 10's digits. Input the length and start by pressing the select key.

**JOy** allows changing the joystick parameters: of jog distance or slew speed. Press the select key to enter the menu system. Press the left or right joystick buttons until `JOy` is displayed. Press up or down on the joystick to select (Sped or Jog). Press select. Press up or down on the joystick to select a value for joystick speed (1-100%) or jog distance (0.01 inch increments). Press select to save the displayed value.

This menu item has 2 sub-menus:

- **Sped-** Allows the user to set the maximum speed that the joystick will move the material or head when pressed twice. Range 1-100.
- **Jog-** Allows the user to set the distance that the head or material will move when a joystick button is pressed and released. Range is 1-100 in 1/1000$^{th}$ inch increments.

  i.e., 1 = 0.001", 100 = 0.100"

**OPEr** is used to select the operation mode between cutting (`CUt`), pen plotting/drawing (`drA`) or pouncing (`POUn`). Press the select key to initiate the menu function, then press the left or right arrow key to display `OPEr`. Press the up or down key to select the desired function. Press the select key to lock the desired menu setting.

**SEt** loads or saves a custom set-up or power up default. Press the select key to initiate the menu function. Press the left or right arrow key to display `SEt`. Press the up or down key to scroll thru (LOAd, Save), press select, press the up or down key to scroll thru the settings (1 – 6). Press the select key to load or are save the setting. Setting #1 is loaded when the machine is powered up. (see also factory and custom set-up section)

The **set** menu item has 2 sub-menus:

**Load-** loads a setup.

***To load a setting:***

- Press select
- Press left or right arrow until **SET** menu is displayed.
- Press up or down arrow to display **Load**.
- Press select
- Press up or down arrow to display the number of the setting you want to load (1-6)

- Press select.

**Save-** saves a customized setting.

***To save a setting:***

- Adjust force, speed, acceleration as needed.
- Press select
- Press left or right arrow until SET menu is displayed.
- Press up or down arrow to display Save.
- Press select
- Press up or down arrow to display the number of the setting you want to customize (1-6) (# 1 is the setting that is loaded on power up.)
- Press select.

#### 5.8.8.1 Mandrel Switches and Controls

On the right of the control panel there are two switches.

**LAMINATION MANDREL** controls whether the lamination mandrel will supply media to web. Turn off if you are not laminating or loading. Turn on for laminating.

**SUPPLY MANDREL** controls whether the supply mandrel will supply media to web. Turn off during loading. Turn on while in use.

# 6 Maintenance & Consumables

## 6.1 B500 Printer (refer to Epson Manual)

### 6.1.1 Substrates

The Epson B-500 uses Epson DURABrite ink, which is a water-based ink. It is recommended that all substrates are coated with an ink jet compatible coating.

## 6.2 i-TECH AXXIS Finisher

### 6.2.1 Changing a blade

The knife blade should be replaced when the force has been increased by more than 20 percent or the cut quality has degraded. The first sign of blade degradation usually occurs in the corners of the cut and may lead to poor weeding.

New blades slide into the holder to a preset height and are held in magnetically. No tools or adjustments are required. To replace the blade, first remove the blade holder from the tool holder by loosening the brass thumbscrew and pulling up on the silver knife holder. Remove black plastic cap. To remove the used blade, grasp it with a pair of tweezers and pull it out of the knife holder (discard the blade safely). Remove the new blade from the plastic case and remove the protective cap. Insert the blade into the holder and let the magnet pull it into the preset position. Install plastic cap. Reinsert the knife holder into the tool holder and tighten the brass thumbscrew.

Replacement blades are available from several sources including from Allen Datagraph Systems, Inc. They can be purchased online @ http://www.allendatagraph.com/ or by calling 603-216-6344.

H20-017 30° Allen Datagraph i-TECH, DFS, Centra, Axxis cutting blade. Ideal for label stock. Angle of blade at 30 degrees to have exact control on depth of cut. This blade has a 0.012 inch (0.0305 cm) offset. It can be identified by its blue plastic cap.

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H20-008 60° Allen Datagraph i-TECH, DFS, Centra, Axxis cutting blade. Ideal for cutting thick materials. Angle of blade at 60 degrees to optimize cut angle. This blade has a 0.012 inch (0.0305 cm) offset. It can be identified by its green plastic cap.

Tool Holder Block

The knife blade holder is installed in the tool holder block with a thumbscrew. The tool holder block is held to the cutting head by two hex drive screws.

**Knife blade holder Assembly**

The blade holder is designed for use with Allen Datagraph's 30°, 45° and 60° blades. Solvents and lubricants should not be used, as they will diminish cutting accuracy.

**Knife Blades**

Knifes blades for the Allen Datagraph AXXIS Unit are made with tungsten carbide and are designed specifically for digital die cutting. The tip is offset from the center of the shaft so that the blade has a caster action when pulled. Blades are available in 30, 45 and 60-degree tip angles. The 60-degree is intended only for thick materials such as sandblast mask or thick over-laminates. For best cutting results, protect the knife tip from damage when not in use.

**Knife Blades Depth Guide**

Allen Datagraph's controlled depth knife holder has a depth guide that is adjustable to control the depth of cut the AXXIS makes. Normal materials do not need to use the controlled depth adjustment and the black plastic cap can be screwed in completely to expose the blade. Material with insufficient backing may require the use of the controlled depth cap. Correct adjustments allow the blade to cut the material and lightly mark the backer (carrier) material. Too much cut depth can cause cut through and premature blade wear. Not enough cut depth will make "weeding" of media difficult.

Use the cut test, force and depth adjustment to establish good cutting (see setting cut force – cut depth section)

### 6.2.2 Changing a cut strip

Clean any debris from the groove before installing the groove filler. The filler simply snaps into and out of place with no special tools required. **It is important that the groove filler be installed fully and evenly, otherwise material cut through may occur**

**in some sections across the cutter.** *The groove filler should be installed for knives and pen plotting, but **must** be removed for Pouncing*

Two different cut strips are available from the http://allendatagraph.com online store. Normal life (DF-310) and extended life (DF-410) cut strips.

### 6.2.3 Cleaning

The regularity with which the cutter needs to be cleaned is dependent on the usage, as well as the climate and contaminants in the cutter's environment. It is recommended that the following cleaning steps be done at least as often as indicated for each procedure:

- **Biweekly**. Clean the three grit wheel surfaces with a stiff bristled e.g. tooth (not wire) brush to remove any media particles that may have built up during cutting. Brush the surface of the grit wheel while turning the grit wheel by hand so the entire surface of the grit wheel is cleaned. CAUTION: Be sure to disconnect the cutter from the power source while cleaning the unit. Keeping the grit wheel clean is important so the cutter will hold the media accurately.
- **Biweekly**. Wipe media-related dust from the set of polyurethane pinch wheels by using a soft cloth.
- **Monthly**. The outer surfaces should also be kept clean. If necessary, a mild cleaning solution on a damp cloth can be used to gently wipe the surfaces clean. It is suggested that a mild soap and water be used with a soft cloth. This solution works well on all painted surfaces. CAUTION: Do not use any abrasive cleaners, as they will cause the paint to blister.
- **Yearly**. Inspect the internal circuit board assemblies and clean accumulated dust as necessary. Be certain that the cutter power is off. Observe static discharge safety procedures that may damage sensitive electronic components. Wear a grounding strap connected to earth ground. Wear safety glasses to protect eyes. Remove rear cover and use compressed air to remove dust and debris. Replace cover to original location and make certain that the boards and any connectors are well seated.

### 6.2.4 Pinch Wheel Maintenance

Pinch wheels are critical to the AXXIS unit's material handling performance. They should be inspected for wear regularly and cleaned as needed. To clean adhesive off the pinch wheels, simply use a soft cloth and denatured alcohol.

In normal use, the pinch wheels will need to be replaced in time. Also, trying to move them when they are in the down position can damage them. If material does not track well and guide alignment has been verified, the pinch wheels may need to be replaced. For best tracking results, replacement pinch wheels should be replaced as a SET.

To check condition of pinch wheels:

**Inspect condition of rubber** The rubber wheel should not have any cracks and should be securely adhered to the aluminum hub of the wheel. The transition from the flat surface of the wheel to the "sidewall" edges of the wheel should be sharp and not rounded.

**Inspect integrity of pinch wheel bearing** This is done by having the pinch wheels in the up position. Spin wheel with finger and observe whether the bearing has a dry sound or not. If it appears to be dry, the wheels should be replaced.

Pinch wheels (p/n PL-00-02-062) can be ordered from the online store at http://allendatagraph.com

### 6.2.5 Mechanical Adjustments

**Belt Tension**

The AXXIS servomotors use timing belts to control the material (X axis) and tool (Y axis) positions. The belt tension and wear should be inspected if cut quality deteriorates. To inspect the belts, remove the back of the AXXIS. This can be done by removing about 4 large screws along the edge of the rear cover. (see also TSB: Mechanical Adjustments to Restore Cut Quality to Normal Web Site Copy / CD Copy)

Y-Axis

The Y-axis short belt runs between the Y-axis servomotor and a gear assembly. To adjust the tension of this belt, it is necessary to reposition the motor bracket.

- Open the back cover (6 screws)
- Loosen the three Phillips head motor bracket screws and apply hand pressure to tighten the belt so that the belt will deflect 0.050 inches at the center when 23 ounces are applied. (1.3 mm when 660 grams are applied).
- When the belt is tight and the motor shaft is **parallel** to the bearing shaft, tighten the three Phillips head motor bracket screws. *Premature belt failure will occur if these two shafts are not parallel.*
- Verify tension.
- Close back cover.

The long belt is adjusted using a lead screw located behind the control panel.

To set the long belt's tension:

- Position the carriage to the far side.
- Remove the control panel housing as follows
- Remove the Allen screws that hold on the cover for the LCD display.
- Loosen the locking nut.
- Adjust the lead screw so that the belt will deflect 0.125 or feels taut. You can also pluck it like a string and is should make a low tone.
- Move the carriage slowly from two or three inches/cm front and back to equalize tension on pulleys. Check tension again.
- Set the lead screw lock nut.
- Verify belt path and tension.

- Replace the control panel housing, top rail cover and rear cover.

X-Axis

- Open back cover
- The belt inside the rear cover drives the grit wheel (X axis). To adjust the tension of this belt, it is necessary to reposition the motor.
- Loosen the two motor bracket screws and apply hand pressure to tighten the belt so that the belt will deflect 1/16 inch at the center when 23 ounces are applied. (2 mm when 660 grams are applied). (Replace belt if damaged or worn).
- When the belt is correctly tensioned, tighten the two motor bracket screws.
- Verify belt path and tension. Check that the large gear turns freely.
- Close back cover

## 6.3 Troubleshooting i-TECH AXXIS Finisher

| Problem | Solutions |
|---|---|
| Cutter does nothing | • Panel lights off, no fan noise : plugged in, power on, cycle power<br>• Check fuse replace with one 5A for 115 vac or two 2.5A for 220 vac.<br>• E-Stop button pressed. |
| Cut through/poor weeding | • Is your knife blade sharp? You can check condition of blade by examining the blade tip under a 30x microscope. The blade tip must be present.<br>• For very thin (less than 0.002 inch, (0.05 mm)) or liner less than 20 lb. media you might need to use the controlled depth adjustment on the end of the knife holder. Partially unscrew the black cap until just enough knife blade is exposed to cut through the media but not the backer. Test by drawing knife across media by hand. You can then use a higher force with no cut through.<br>• It is important that the groove filler be installed fully and evenly, otherwise material cut through may occur in some sections across the cutter.<br>• Insufficient backer weight.<br>• Check mechanical adjustments Website Copy / CD Copy<br>• Increase / Decrease force. Increase decrease knife offset.<br>• Check cut strip condition. Replace or reverse if damaged.<br>• Decrease acceleration or speed.<br>• Increase resolution in printer driver.<br>• Using wrong angle of blade for material.<br>• Not tracking. Fix this first. |
| Images are incorrect size | • If error is small (< 1/2 inch (12 mm)) make sure grit wheel is clean. Dirt build up in grit will change the size of the |

| | |
|---|---|
| | grit wheel making it cut the wrong size. Run diagnostic 07 to calibrate the cutter to a ruler or a printer as desired. |
| Contour cuts are wrong size. | • If you are using origin only or origin skew no scaling is done to image received. In this case you must calibrate the cutter to your printer rather than a ruler. You do this by printing a large rectangle on your printer. Then cut the same size rectangle. For x and y drawn use printed size rather than a ruler as drawn or desired size.<br>• If you are using origin scale, or origin skew scale then the size of the cut is change by the x or y sensor size parameter in the line sensor menu.<br>• See SmartMark™ setup in Appendix A |
| Labels or contour cuts are cutting in the wrong spot | • Verify you created job correctly.<br>• Origin Target is at minimum x and maximum y of drawing.<br>• The scan area contains only target and background with no stray marks that could be seen as targets.<br>• Verify printer properties are correct<br>• Rotation is set correctly. Target cut should be in same corner on preview as selected origin corner.<br>• Find origin cutter driver property is not set correctly.<br>• Verify sensor settings have not been lost<br>• In the remote panel select setup -> line sensor menu.<br>• Verify x sensor offset is about 0.75 inch and y sensor offset is about –0.1 inch<br>• If your job is off by only a little bit (less than 1/8 inch (3mm)) and is same for every frame you can measure this error and correct your x and y sensor offset by the amount of the error you measure.<br>• Verify scan length is the same as the length of the side of the target<br>• Verify the scan offsets = ½ of the length of the side of the target<br>• Verify the Scan Velocity is either 1 or 2.<br>• Verify the space between jobs in the line sensor menu is zero. |
| Target errors tar1, tar2, tar3, tar4 | • These errors indicate that the target scanner did not find the target.<br>• If tar1 on first frame: |

| | |
|---|---|
| | ○ Check x offset distance<br>○ Verify there is about ¼ inch white space on rear edge of target bar.<br>○ If no targets are present reduce threshold or increase Thresh count, or increase max scan distance.<br>○ Verify red led is lit.<br>○ Check that distance led is from media is 3.4 to 4.6 mm.<br>○ Run line sensor diagnostic (21) to verify operation of sensor.<br>• If tar1 on 2nd or subsequent frame<br>○ Verify space between jobs in printer driver is set correctly. If it is set correctly after cutting first frame the knife blade should be on the right rear corner of target of next frame. Normally this is set between 0.85 and 0.9 for Axxis SR.<br>○ Check printed space between jobs is same for all frames. If not check print dancer or input print dancer tension.<br>• Tar2 – 4.<br>○ Verify job you are sending matches job you printed<br>○ Verify rotation is correct in printer driver<br>○ Verify job is built correctly in that scale and skew target print is in same location is die lines for scale and skew target.<br>○ Verify scale and skew targets are at extents of image. Skew should be a minimum x and maximum y. Scale target should be at maximum x and minimum y. |
| No action when you send data to cutter | • Allen Spooler: If plot is sent from computer and cutter doesn't cut, check for Allen spooler in the task bar (Lower right of monitor, green box with red arrow, near time). If it is not there, go to start button, programs (all programs), startup, Allen spooler and click on Allen spooler. If you get message saying Allen spooler starting with one job left in queue, cancel it and send job again after checking to see that cutter is ready.<br>• Click on red arrow in green field icon in service icon area. |

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| | If you are getting unable to open port displayed<br>• See if remote panel still has port open. It should auto close the port after 5 seconds.<br>• Reboot computer and power cycle cutter, cancel all jobs and try send job again.<br>• Verify port selected is correct. You can find the correct port from the device manager.<br>• Plug usb cable into same usb port as you normally do. Different usb holes are normally configured as different com ports.<br>• Rerun enable printer driver to find cutter. Start > All Programs > Allen Datagraph > Cutter Driver > Enable printer driver<br>• Try different usb cable or different computer.<br>• From spooler cancel all jobs, turn cutter off/on and resend job.<br>• No usb driver installed for equipment Website Copy / CD Copy<br>• Cutter in pause state. |
| Job does not complete | • Verify minimum cutter driver level of 2.10a. New software can be downloaded from Web Site Copy<br>• Try a different cable or computer<br>• Try using Ethernet for communication method |
| When I turn my cutter on, the head reaches the side plate and makes a loud noise | • Loose long Y belt<br>if carriage is getting to the right side and making a ratcheting noise, it's could be the long y axis belt, or the y axis motor belt located under the left control panel. To determine which belt it is, turn the machine on while holding out on the long belt that attaches to the cutting head. What this does is put more tension on the belt. If the head gets to the side and they don't hear the noise, proceed to below:<br>Remove the front control panel and locate the belt tensioner. This is a wedge-shaped device with a long Phillips head screw protruding toward the rear of the machine.<br>Loosen the 3/8" locking nut holding the tensioner screw in place. Turn the Phillips screw a couple turns clockwise, then turn the cutter on before attaching the control panel. If the cutter initializes, there is no need to look further. If this does not solve the problem, proceed to the next step:<br>Open rear cover, turn cutter on and observe the belt attached to the motor. If the motor pulley continues to turn, |

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| | then the short motor belt is most likely either loose or worn out. Carefully inspect the teeth on the belt for wear with the machine off. The pulley can be rotated to allow inspection of teeth.<br>• If the teeth are not worn or stripped off the belt, loosen the three mounting screws holding the motor bracket to the sideplate. Apply tension to the motor bracket BY HAND, and tighten the screws. The belt should have less than 1/8" of free play when properly tightened. |
| Router keeps changing my ip address | • Some routers do not keep a table of mac addresses so that the same computer will be assigned same ip address each time you power up. In this case run diagnostic 4 and assign a static ip address to the cutter. See also Website Copy / CD Copy |
| Material Does not track straight | • Inspect pinch wheels<br>• Clean grit wheel and pinch wheels.<br>• Reduce acceleration and / or velocity.<br>• Insure cutter is loaded straight. Same distance from back wall from supply to takeup.<br>• Perfect leveling is not required in steps below but adjustments need to be close.<br>• Machine loaded per Webbing the SR<br>• Machine Level (place level on cut strip) level with machine / table legs.<br>• Adjustable bars level. Set level on Web guide 3, exit roller and adjust until level.<br>• Mandrels Level (to adjust remove back of machine and loosen 4 mandrel leveling bolts. Align with Square. Check with level. Tighten bolts.)<br>• **Skewing**<br>• Verify both left accumulator dancer bars are not bouncing on bottom or top of service loop. Bouncing will cause the media to slip between the grit wheel and the pinch roller. |
| Lamination Not Tracking | • Machine loaded per Webbing the SR<br>• Machine Level (place level on cut strip) level with machine / table legs.<br>• Printed media must be wound on core evenly<br>• Laminate same width or smaller than printed stock. Laminate with should be 1/16" to 1/8" smaller than printed stock. |

| | |
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| | • Too much pressure on laminate roller (blue rubber roller). Only a light pressure is required on laminate roller.<br>• Uneven pressure on laminate roller. To set pressure loosen two nuts on each pressure control. These are the hinged cam latches that supply the pressure on the blue roller. To measure the pressure you need to create two sandwiches of three pieces of the unlaminated printed media. Place one sandwich under operator side latch and one under gear side latch. Adjust the pressure the latch applies to the blue roller until both centerpieces of the sandwiched media can be pulled with the same amount of force. Test tracking. After laminate tracking works correctly tighten lock nuts.<br>• Mandrels not perpendicular to back plate. |

# A Appendix A – i-TECH remote panel Advanced Options

## A.1 Enable Advanced Options

To enable advanced options select setup -> options from remote panel. Change advanced/normal menu options to advanced.

## A.2 Action Menu

### A.2.4 Send HPGL File

Send HPGL File will send a HPGL plot file directly to the Axxis. Typical origins of HPGL files include the Allen Driver, CorelDraw or some other design software. To send a HPGL cutter file from the remote panel program click the Send HPGL File menu item to open the select file window. Select the files desired and click the Open button. This will send the file directly to the Axxis.

### A.2.5 Cancel, Continue, Pause

These commands will cancel, continue, or pause a job being sent by the Send HPGL command. For jobs sent by other programs you can use the Pause button on the AXXIS and the (F1, F2, F3) combo to cancel the currently cutting job.

### A.2.6 Open Com Port

Opens a communication channel to the Axxis and sets a long timeout for close.

### A.2.7 Close Com Port

Closes communication port to cutter. Since only one program can talk to cutter at a time, selecting this command allows other programs to talk to Axxis. The remote panel will normally automatically close the com port after a period of inactivity.

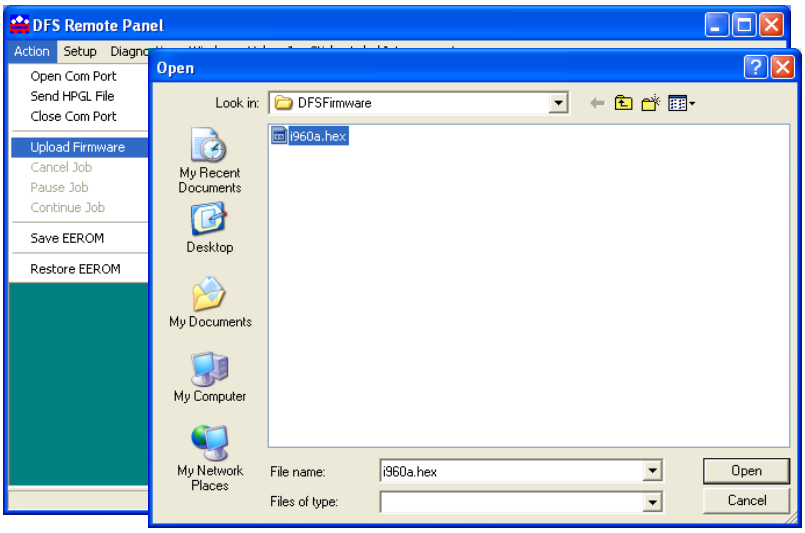
### A.2.8 Upload Firmware

***The firmware on this disk is provided for update purposes only and should not be installed on new machines. In general you should not install a firmware update unless***

***directed by a member of the technical support staff.*** *Firmware updates are available on the technical support page of the Allen Datagraph web site at* [*http://www.allendatagraph.com*](http://www.allendatagraph.com).

This procedure details the firmware upgrade procedure. Normally firmware is only sent to customers when a software problem is reported that has been fixed in a later version of the software.

From time to time Allen Datagraph will recommend that you upgrade your firmware in your Allen Datagraph Axxis. A file can be downloaded from the Allen Datagraph web site and saved to the desktop.




Before running the setup program be sure to exit the older version of the Remote Panel.

### A.2.8.1 Firmware Installation Instructions:

Turn off your equipment. Press the load button on your front panel and then, turn on the Allen Datagraph equipment to be upgraded. Start the Remote Panel by clicking on start, program, Allen Datagraph, Remote Panel. Click on Setup, Com Port and verify that the correct port has a check next to its name. Click on Action, Upload Firmware. If asked, select pic32rel.hex file and click Open. If the upload fails, you will be given a backup procedure to follow on the computer screen.

### A.2.9 Save to EEROM and Restore from EEROM

This procedure allows saving the eerom and restoring it when certain hardware is replaced.

## A.3 Setup Menu

These commands are used to save custom settings and factory settings to the computer when certain electronic components need to be replaced.

### A.3.4 Main Menu

Knife Settings Tab

The AXXIS will also self adjust the speed within certain limits based on the speed of the device feeding the unit. The range for speed is 1 to 100%. Enter **min and max speed for Label Mode** and check the **Allow Speed Change**. This option is only useful in alternate hardware configurations. Not support on standard Axxis model.

Hole Distance and Tear Size are used when the AXXIS is in the Pounce Mode. The hole distance setting is the distance between holes and the tear size is the distance the AXXIS moves with the pounce tool down to tear the media and enlarge the pounced hole

The Rubber tab

Rubber Scratch Force displays and sets the down force used during tangential emulation. This is primarily used when cutting thick materials such as sandblast rubber. Tangential emulation simulates a tangential or servo controlled rotating knife by moving to a position short of the vector to be cut and putting the knife blade down with a very light force while moving toward the direction of cut to align the knife before applying the full cutting force. This improves the cut quality in thick materials. (default 0.1%)

Rubber Backup Multiplier (default 20) displays and sets the distance the knife will be dragged at the light force used to align it. This parameter is used with and is additive to the Rubber Backup Offset (default 0.02). The Rubber Backup Multiplier is based on the change of angle between vectors and the Rubber Backup Offset is a constant added to the distance calculated based on angle.

Rubber Minimum Angle (default 19) is the rotation angle between two vectors that enables tangential emulation. Subsequent vectors that have angle between them exceeding this parameter cause the pen to be picked up, dragged along the surface to align the knife and plunged into the media at the beginning of the next vector. Subsequent vectors that have angle between them less than this parameter will perform a drag rotation.

Max Motion Vector Length (default 0.001) (Named after the driver that outputs very small vectors) Allen AXXISs very accurately replicates the vectors in the HPGL plot file. Some design programs output vectors that are very short. It is sometimes desirable to combine some of these vectors into a longer vector to eliminate jagged edges or slow cutting. This parameter works like a curve-smoothing algorithm and is used to improve poor HPGL files.

Anticipation Rubber (default 0.001) and Anticipation Vinyl (default 0.0004) is a parameter that adjusts the backlash compensation in the AXXIS. The Anticipation Rubber is the parameter used when the AXXIS is in tangential emulation mode and the Anticipation Vinyl is the parameter used when not in tangential emulation mode. Heavier materials require more backlash compensation. These numbers are individually set at the factory and should not require adjustment except when cutting heavy materials. If you are experiencing thick and thin lines or misshaped letters, adjust the anticipation parameter to obtain satisfactory results.

### A.3.5 Setup -> Line Sensor Skew tab

Y Target Location. This is the distance between the origin target and the skew target when the 2nd parameter of the FO command is –1. This command is used on CAD systems that do not emit the FO HPGL command. You set up the initialization string to have

**BJ1;FO-1,-1;** <for origin skew and scale processing>

or

**BJ1;FO0,-1;** <for origin and skew processing>

This causes the AXXIS to look at the Y Target Location parameter from this menu item.

### A.3.6 Setup -> Line Sensor Scale tab

X Target Location. This is the distance between the origin target and the scale target when the 1st parameter of the FO command is –1. This command is used on CAD systems that do not emit the FO hpgl command. You set up the initialization string to have:

**BJ1;FO-1,-1;** <for origin skew and scale processing>

This causes the AXXIS to look at the X target location parameter from this menu item.

COORDINATE SYSTEMS

### A.3.7 Setup -> Settings

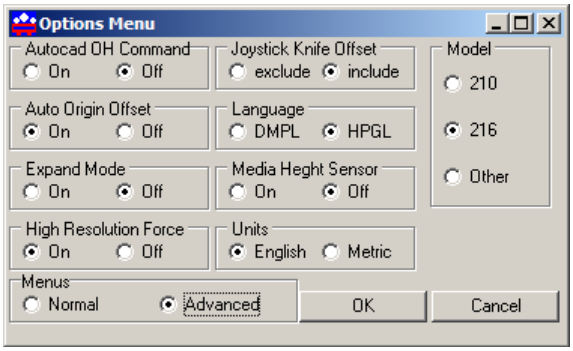
Dynamic Force engages the dynamic force function that instantaneously adjusts the force on the fly based on the actual velocity of the knife blade. All AXXISs must accelerate and decelerate as they cut around corners. Some medias require different force settings for different speeds. This parameter allows for building a database for these materials and when enabled will greatly improve the cutting on these materials. (See the Setup → Dynamic Force for more details)

Coordinate System

Allen Systems have four origins to allow for flexibility when using various CAD/CAS systems. The AXXIS is shipped with the Long X coordinate system in all factory set-ups and is compatible with most cutter or printer drivers. The choice of coordinate systems other than Long X is beyond the scope of this document.

### A.3.8 Setup -> Options

Menus **option offers the more advanced features of the software. It is recommended this be set to Normal until a more advance feature is understood or is required by your operation. The menu items below are displayed when the menus is set to Advanced.**



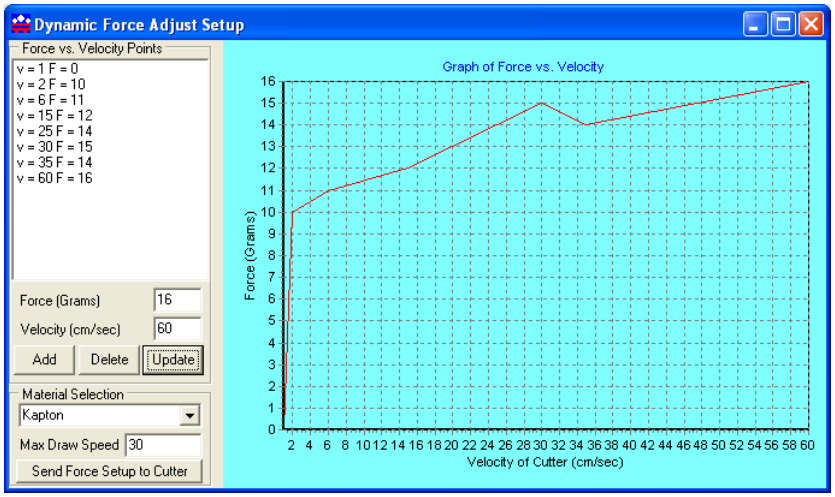

Autocad OH Command **determines how the system will respond to the HPGL OH command.**

Expand Mode allows the AXXIS to cut past the normal clip limits in the Y-axis. This function allows cutting and extra 1/2 inch wider (12 mm).

**High Resolution Force** sets the force resolution to 1 to 1000 steps instead of 1 to 100 steps. It is useful when cutting very hard to cut medias. It allow setting the force between two of the standard force settings. A force of 112 is equivalent to 11.2 % force. (also see the Setup → Dynamic Force )

**Joystick Knife Offset** this option controls whether the cutting data point includes or excludes the knife offset. The normal setting is exclude. Include is used for CadLink's Signlab program when digitizing only. You should use exclude for all cad systems except Signlab.

### A.3.9 Setup → Dynamic Force


Dynamic Force Adjust Setup
Force vs. Velocity Points
v = 1 F = 0
v = 2 F = 10
v = 6 F = 11
v = 15 F = 12
v = 25 F = 14
v = 30 F = 15
v = 35 F = 14
v = 60 F = 16
Force (Grams) 16
Velocity (cm/sec) 60
Add
Delete
Update
Material Selection
Kapton
Max Draw Speed 30
Send Force Setup to Cutter
Graph of Force vs. Velocity
Force (Grams)
Velocity of Cutter (cm/sec)

This feature is considered an advanced feature and does not appear on the Setup menu unless the menu is set to advanced on the option page. Dynamic Force allows different forces to be applied at different velocities. Adjust sets up the dynamic force parameters and database. To establish a new material database type in the name of the new material in the **Material Selection** box and click **Add**. In the Force and Velocity Window, type in the desired force vs. velocity that you have established for the material. The recommended method for establishing the various force vs. velocity numbers is to run the test cut at various velocities and record the results for entry here.

Enter the Maximum cut speed for the media in the **Max Draw Speed** window.

Before using Dynamic Force Adjust, it is necessary to send the force setup to the cutter memory by clicking the **Send Force to Cutter** button.

## A.4 Diagnostics

The Axxis firmware contains a set of resident diagnostics. When the Axxis is powered up, it automatically performs a self-test program to check all operating parameters. If a malfunction is detected, the letter "E" and a three-digit error number will be displayed in the display window. The error numbers and the corresponding malfunction descriptions are given in the error code appendix B. When an error is displayed and no obvious damage was done to the Axxis, power off the Axxis and repeat the procedure that caused the error to display. If the error reoccurs, the user may push any key on the control panel to enter the diagnostic mode. Many errors automatically place the Axxis in the diagnostic mode when a key is pressed.

The fail-safe system is designed to detect failures in the operation of the electromechanical system in the Axxis and to prevent such failures from causing other damage. The Axxis monitors motor currents and will generate an error if motor current

too high or unmeasurable. It also generates an error for impossible or dangerous conditions. The appropriate error code will appear, as mentioned above, in the display window on the control panel.

The diagnostics in the AXXIS exist at several levels:

1. POWER-ON
2. CONTINUOUS HARDWARE AND SOFTWARE MONITORING
3. OFF-LINE

The **POWER-ON** diagnostics are performed at power-on or reset of the microprocessor and test the microprocessor, memory, servo analog and digital hardware, and some of the testable sensors.

After initialization, **CONTINUOUS HARDWARE AND SOFTWARE MONITORING** check the sensors and fail-safe monitors for machine malfunctions. If a malfunction is detected, an error code is displayed on the control panel display, motors are shutdown and the Axxis ceases operation.

**OFF-LINE** testing is used for manufacturing and field service testing and for making certain adjustments to the AXXIS such as calibration.

To Run Diagnostics if the AXXIS unit is displaying an error code on the front panel display, press any key to enter the diagnostic mode.

## A.4.4 How to run Diagnostics

### A.4.4.1 From Front Panel

Turn unit on and allow initialization to complete. If the AXXIS is displaying a flashing error code on the front panel display, press any key to enter the diagnostic mode.

Press the select key to initiate the menu function, Press the left or right arrow key to display `diA`. Press the up or down key to scroll thru the diagnostic numbers (0002 – 0099). Press the select key to start the diagnostic.

**TO STOP A DIAGNOSTIC**

Press the reset key sequence F1, F2, F3.

**TO EXIT THE DIAGNOSTIC MODE**

To return to normal operation, run diagnostic 99 or cycle the AXXIS power off and on

### A.4.4.2 From Remote Panel

To start diagnostic select diagnostic to run from diagnostic pull down menu in the Axxis remote panel. Follow on screen directions. To stop a diagnostic press the CTRL-C character on the keyboard or turn off and on the Axxis.

## A.4.5 Setup Diagnostics

### A.4.5.1 Setup/Operation Analog Accumulator Sensors

### A.4.5.2 Diagnostic 40 Set Accumulator Length

Diagnostic 40 allows setting Analog rail length set to 2 times the distance between top and bottom of movement available. We use 17.5 inches on Axxis SR.

### A.4.5.3 Diagnostic 55 Set Accumulator Type

Diagnostic 55 allows setting sensor type for accumulator. Default is fill. Set to AnLg.

### A.4.5.4 Diagnostic 45 Set Stepper Speed

Diagnostic 45 allows setting speed of stepper motors. Time steppers by timing the feeding of 36 inches of media. The divide 36 by the time measured. Enter this number. On Axxis this number should be about 3.5 inches per second.

### A.4.5.5 Diagnostic 44 Map Accumulator Position

If you have analog sensors you must map the sensors since the transducer is not linear. Diagnostic 44 allows mapping the non-linear position of the analog position to adc values.

Before running diagnostic check operation of the adc. Do this by removing media and running diagnostic 41 for supply sensor and 42 for print dancer. Display will oscillate between the position and the adc value. The position value will not be correct until completing this diagnostic.

The top adc value should be in the range of 1-50 adc counts. You do this by making the plunger for the sensor just slightly push in the plunger. You change this by either rotating the block on the bar or moving the top of the diagonal toward or away from the sensor.

The bottom adc value should be between 600-750. If you have a larger value the plunger is probably bottoming out. You fix this by moving the bottom of the diagonal away from the sensor.

In order to load media on a machine on machine that has never run diagnostic 44 you have to turn off label mode with diagnostic 64 = off.

To run diagnostic load media between supply nip, through pinch wheels. Accumulator dancer should be within 1/8 inch of the very bottom on the supply side. The pinch wheels should be down. Start diagnostic 44. The adc values for input accumulator and print dancer will oscillate. One ADC number should not matter and the other between 600-750.

Press select. Then “run” is displayed.

The grit will advance media 1/8 inch at a time recording adc value for each 1/8 inch position. At the end of the diagnostic 44 good or bad is displayed.

If good press select and then run diag 64 to turn label mode on if you turned it off before, Then run diagnostic 41 to verify top, bottom and middle positions displayed. Top should display 0.00 inches bottom should display number set in diagnostic 40 above. Middle should display about 1/2 this number.

If bad is display the starting value is > 255 or the bottom value – top value is < 100 adc counts. Fix mechanical or electrical problem and try again.

Exit diagnostic by pressing any button on the front panel.

### A.4.5.6 Calibrate 07

See calibration procedure at Website Copy / CD Copy available on the technical support page of the Allen Datagraph web site at http://www.allendatagraph.com.

### A.4.5.7 Calibrate to Printer

See calibration procedure at Web Site Copy / CD Copy available on the technical support page of the Allen Datagraph web site at http://www.allendatagraph.com. -> tech support -> Axxis -> SmartMark Sensor Page.

### A.4.5.8 Calibration Square Output

This diagnostic prompts for a square size and sends an HPGL command to output the square. This is useful when calibrating the Axxis to a ruler rather than a printer and is normally not required. Specifying 6 inches for the size will send the HPGL job to the Axxis that will cut a 6 inch rectangle.

### A.4.5.9 Default Calibration 08

This diagnostic sets the calibration constants back to the factory defaults prior to initial calibration. After running this diagnostic you will have to either restore the calibration constants or rerun the procedure described in TSB on CalibrationWebsite Copy / CD Copy or Smartmark™ calibration Web Site Copy / CD Copy available on the technical support page of the Allen Datagraph web site at http://www.allendatagraph.com. As this is a rather involved procedure Diagnostic 08 should be avoided unless you have received an E37 error, which automatically runs this diagnostic.

### A.4.5.10 FO Output

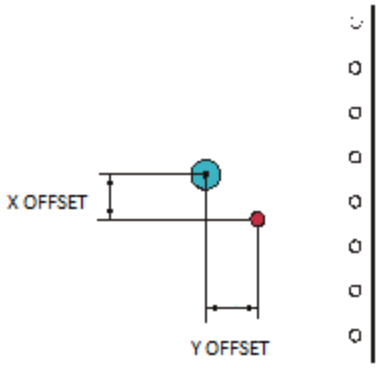
This diagnostic sends the <esc>.vfooutput: command which displays software debug information about the last SmartMark™ scan. The first line output indicates the location of the three targets and whether they were found. The last two lines indicate the amount of scaling and rotation calculated that need to be applied to the HPGL commands to cut the image.

It normally is not useful for customers to run this diagnostic. Information displayed is recorded in the serial.log file.

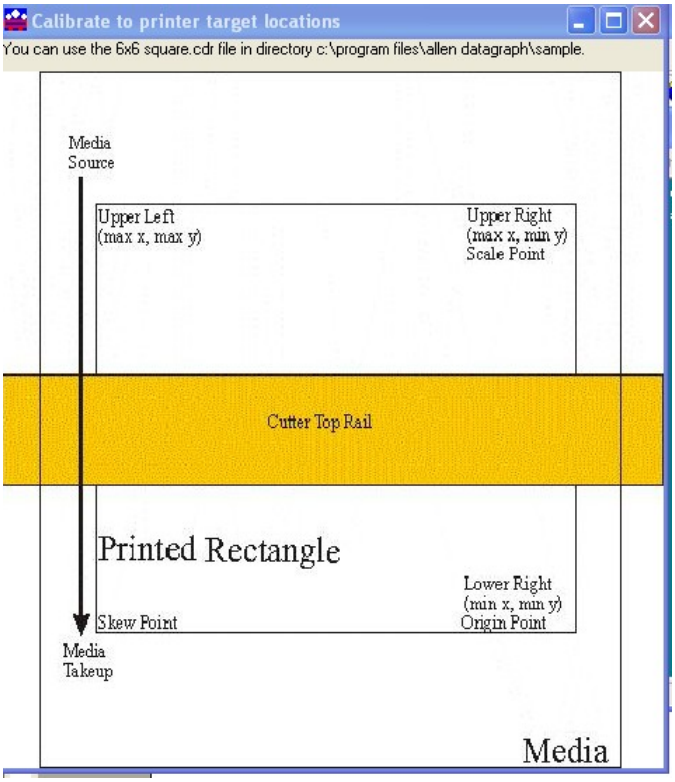
### A.4.5.11 Smart Mark Setup

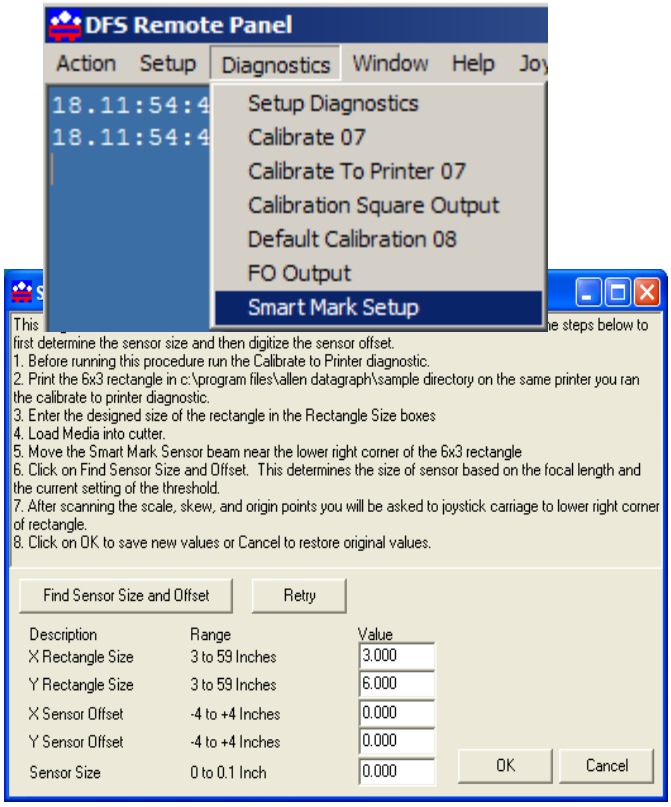
### A.4.5.12 Sensor Offset

The SmartMark™ sensor is offset from the center of the knife. The red dot indicates the LED point and the blue circle represent the knife. This value is normally setup at the factory or during installation of the AXXIS. The offset distance is preset at the factory, but may need to be adjusted on occasion. You may follow this procedure only if you own a digitizing site (Allen p/n PL-00-11-500). Otherwise you must follow the manual procedure described in the TSB Calibration Web Site Copy / CD Copy.



To automatically reprogram the SmartMark™ sensor offset and sensor size parameters: Open the AXXIS Remote Panel. Open the **Diagnostics** Menu and click on **SmartMark™ Setup**


Calibrate to printer target locations
You can use the 6x6 square.cdr file in directory c:\program files\allen datagraph\sample.
Media Source
Upper Left (max x, max y)
Upper Right (max x, min y) Scale Point
Cutter Top Rail
Printed Rectangle
Lower Right (min x, min y) Origin Point
Skew Point
Media Takeup
Media


DFS Remote Panel
Action Setup Diagnostics Window Help
Setup Diagnostics
Calibrate 07
Calibrate To Printer 07
Calibration Square Output
Default Calibration 08
FO Output
Smart Mark Setup
first determine the sensor size and then digitize the sensor offset.
1. Before running this procedure run the Calibrate to Printer diagnostic.
2. Print the 6x3 rectangle in c:\program files\allen datagraph\sample directory on the same printer you ran the calibrate to printer diagnostic.
3. Enter the designed size of the rectangle in the Rectangle Size boxes
4. Load Media into cutter.
5. Move the Smart Mark Sensor beam near the lower right corner of the 6x3 rectangle
6. Click on Find Sensor Size and Offset. This determines the size of sensor based on the focal length and the current setting of the threshold.
7. After scanning the scale, skew, and origin points you will be asked to joystick carriage to lower right corner of rectangle.
8. Click on OK to save new values or Cancel to restore original values.
Find Sensor Size and Offset
Retry
Description
Range
Value
X Rectangle Size
3 to 59 Inches
3.000
Y Rectangle Size
3 to 59 Inches
6.000
X Sensor Offset
-4 to +4 Inches
0.000
Y Sensor Offset
-4 to +4 Inches
0.000
Sensor Size
0 to 0.1 Inch
0.000
OK
Cancel

Before running this procedure run the Calibrate to Printer diagnostic.

1. Print the 6x3 rectangle in c:\Program Files\Allen Datagraph\Sample directory on the same printer you ran the "calibrate to printer diagnostic".
2. Enter the designed size of the rectangle in the Rectangle Size boxes
3. Load Media into AXXIS.
4. Move the SmartMark™ Sensor beam near the lower right corner of the 6x3 rectangle
5. Click on Find Sensor Size and Offset. This determines the size of sensor based on the focal length and the current setting of the threshold.
6. After scanning the scale, skew, and origin points you will be asked to joystick the carriage to the lower right corner of the rectangle. Use either the optional fiber optic bombsite so that the center of the bombsite is directly above the lower right hand corner of the printed rectangle.
7. Click on OK to save new values or Cancel to restore original values.

You can review the numbers by opening the **Setup** Menu, click on **Line Sensor Menu**. See section describing the line sensor menu.

## A.4.6 Customer Diagnostics

### A.4.6.1 Set Model Number 03

This diagnostic allows setting model number into cutter so it knows it is an Axxis Cutter. Start diagnostic. Enter model 218 for Axxis Finishing System then press the Select Key.

Model number can also be set from the Setup -> Options menu.

Model number should not be changed under normal circumstances. Password to change model number is 23.

### A.4.6.2 LAN address IP assignments 04

Normally you do not need to run this diagnostic. If you are using a cross over cable the default address is 192.168.4.10 and you have set your computers ip address to 192.168.4.2. If you are using a dhcp server, most algorithms normally try to assign same ip address to mac address everytime the device requests an ip address. If you have trouble with your dhcp server giving you a different ip address everytime you turn on your machine you can set a static ip address.

select -> right arrow to dia -> up arrow to 0004 -> select

select ip or dhcp (static / dynamically assigned)

change ip address part 1 (0-255) (use force/speed up/down to change value) select

change ip address part 2 (0-255) select

change ip address part 3 (0-255) select

change ip address part 4 (0-255) select

MAS is displayed. press select

change mask address part 1 (0-255) select

change mask address part 2 (0-255) select

change mask address part 3 (0-255) select

change mask address part 4 (0-255) select

GATE is displayed. press select

change gateway address part 1 (0-255) select

change gateway address part 2 (0-255) select

change gateway address part 3 (0-255) select

change gateway address part 4 (0-255) select

then power off cutter and back on.

Example: if you want to set static ip to 192.168.3.30 with mask of 255.255.255.0 and gateway of 192.168.3.1

you would:

select -> right arrow to dia -> up arrow to 4 -> select

select ip  (static)

change ip address part 1 192 select

change ip address part 2  168 select

change ip address part 3 3 select

change ip address part 4 30 select

MAS is displayed. press select

change mask address part 1 255 select

change mask address part 2 255 select

change mask address part 3 255 select

change mask address part 4 0 select

GATE is displayed. press select

change gateway address part 1 192 select

change gateway address part 2 168 select

change gateway address part 3 3 select

change gateway address part 4 1 select

### A.4.6.3 Button Diagnostic 31

Test the operation of each of the buttons on the front panel.  Buttons must be pressed as prompted by this display code, in the following order: Load, Pause, Copy, Speed Up, Speed Down, Force Up, Force Down, Test Cut, F3, F2, F1, Select, Left, Right, Up, Down.  If the wrong code is received the error code E036 is displayed otherwise the requested button is requested with  a prompt.

### A.4.6.4 Confidence Test 02

The confidence test is used to verify the operation of the cutting station of the AXXIS.  It fully tests the capability of the cutting CPU and Servo control system.

First Load A size paper (8.5 x 11) into the cut station.  Lower pinch wheels.  Do not press load.  Insert a Pen into the tool holder.  Start diagnostic.

### A.4.6.5 Flag Monitor / Adjust 34

This diagnostic is used to verify the correct flag position on the cutting head.  It displays the knife height on the display. The flag is a small, flat, angled piece of metal which moves up and down between a pair of circuit board mounted sensors. The flag is held on

to the knife holder by 2 Allen screws, which are loosened slightly if adjustment is necessary. There are 3 locations the knife holder can be in. They are:

**Bottom** (remove the knife from the holder and press the holder down to the bottom) The display should read between 000 and 006.

**Down** (press the knife down with a knife in the holder) The display should read 018 to 040 pressing down with a knife in the holder (no media present). Adjust flag position if necessary.
**Top** (hold the knife up) The display should read 0100 or more.

The display should change immediately as you move the knife up or down from its stops.

Slightly move the flag to obtain the above reading at each of the three locations.

Check that the flag screws are tight and recheck Bottom and Down.

#### A.4.6.6 Flag and Print Dancer Setup - Z Axis 58

This diagnostic trains the Axxis to match the carriage installed.

**Phase 4**: Set Tool Bottom - Remove the tool from the holder and press the Select Key.

**Phase 5**: Set Tool Down - Adjust knife depth guide to equal the blade length. Place knife tool in holder and press select key.

**Phase 6** set print dancer = empty or clockwise position and hit select.

**Phase 7** set print dancer = full or counter clockwise position and hit select.

#### A.4.6.7 Label Mode 64

On power up the label mode is set to on. If you want to run without accumulators and stepper motors you can run this diagnostic and set label mode to off.

#### A.4.6.8 LED and LCD display 29

This diagnostic display characters on the 4 digit LCD display and flashes the LEDs.

#### A.4.6.9 Line Sensor 21

This diagnostic displays the amount of reflectance received back from the SmartMark™ sensor. It is normally < 20 for black and > 80 for white.

#### A.4.6.10 Amplifier Status

This diagnostics displays the temperature of the motor amplifiers

### A.4.7 Manufacturing Diagnostics

**It is not recommended that the Manufacturing Diagnostics be run unless instructed by direct contact with Allen Datagraph Technical support. Damage to the system is possible.**

#### A.4.7.1 Collect Motor Position

Used by engineering to tune the servo system

#### A.4.7.2 Default Gains 48

Reset x, y , z axis gains to default values

#### A.4.7.3 Lift/Lower Continuous 37

Exercises the z axis lift lower at different forces. Continuously raises and lowers the knife.

#### A.4.7.4 Lift/Lower Demand 38

Exercises the z axis lift lower at different forces. Raises and lowers the knife on each select key press. While knife is down at a force the cutter displays the current through the voice coil and the width of the pwm pulse to the z axis driver.

#### A.4.7.5 Line Sensor Test

Used by engineering to tune the line sensor hardware

#### A.4.7.6 Motor Position Plot

Used by engineering to tune the servo system

#### A.4.7.7 Read Calibration Constants

Reads and displays the scaling constants for the x and y axes. Safe to run. X and Y encoder counts per inch are around 8000.

#### A.4.7.8 Spare Out

Used by engineering to test hardware

#### A.4.7.9 Tuning (Engineering)

Used by engineering to tune the servo system

#### A.4.7.10 Write Plot Data to Excel

Writes the last tuning graph to file that can be imported into an Excel spreadsheet.

# B Appendix B – Error Codes

The mmc software error codes are in the following linked document. Web Site Copy / CD Copy.

# C Appendix C – Radio and Television Interference

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

In order to maintain compliance with FCC regulations shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio & television reception.

This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions; (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.